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Caught between policies and practices: Sudanese migrants’ experiences of AMEP in Australia

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Abstract: This paper discusses the relationship between policy and its actual implementation and effect as seen by language learners. The context for the discussion is the English language programs designed to support newly arrived immigrants in Australia, the Adult Migrant English Program (AMEP). The paper will firstly give an overview of this program and its underlying policy, which clearly sets out some pedagogical aims and the broader goals of assisting migrants integrate into Australian society. Then, the paper will introduce the aims of the ethnographic study, which explored the experiences of those English learners who participated in this program. By drawing on the participants’ views as expressed in their discourses, I intend to highlight the contrasting characteristics of policy aims and its effects. I will provide quantitative data to give background information about participants demographics, their AMEP participation rates and their self-reported linguistic abilities, then I will move on to the qualitative analysis of discursive data collected through survey-interviews and some follow up in-depth interviews. The results demonstrate and highlight the need for policies to be continually informed from bottom-up learner experiences. Without such feedback into the policy cycle, pedagogies and language learning and teaching practices cannot fulfil their aims.

Keywords: Language policy; immigrants; African refugees; English as a second language in Australia

Introduction

This paper presents some of the findings of a 3-year research project, which was conducted in the Sudanese community of Australia. The aim of the project was to map out language use and language proficiency in the Sudanese community with the dual focus of identifying language resources as brought over from Africa and that of diagnosing gaps in their English language proficiency. While Australia plays a significant part in resettling refugees from all over the world and it has had a leading multicultural policy advocating for linguistic diversity, the right for immigrant communities to maintain their linguistic and cultural heritage, and a well-established long-standing program for supporting immigrants in their efforts to learn English (through the Adult Migrant Education Program), there is a need to monitor the affect and efficiencies of these programs on an ongoing basis and conduct rigorous research about the experiences that migrants (as clients of these programs) have. This paper presents some of the findings relevant to the migrant experience of the AMEP program in Queensland, mainly in the Toowoomba region.

Australia is home to over 150 Indigenous languages and over 300 immigrant (or sometimes called “community” languages). This de-facto linguistic diversity poses important challenges to policy makers. Effective language education planning is required to assist immigrants in settling to their new country and become part of the social fabric, which is only possible through the use of the dominant language, English. The AMEP program is the main program which provides this channel for adult migrants, while children learn English at school and receive additional language support through so called “ESL support” or
“withdrawal classes” which means that children have access to ESL support during normal class time only.

The other challenge is to do with the maintenance of immigrant languages and while language maintenance is not the focus of this paper suffice it to say that the development of additive bilingualism in immigrant communities with has the benefit of building social capital in two languages and across national borders, keeping contacts with relatives and their cultural heritage strong. These policy challenges are rather complex and require commitment from top-down as well as an active bottom-up advocacy and implementation (Hatoss, 2006, 2008, 2013).

A fundamental research problem in the field of language planning is the impact of top-down language policies on language communities. While language policies attract vigorous academic attention, there is a lack of attention to “bottom-up” i.e. community-driven approaches in language planning and there is a severe lack of empirical evidence of the effects that language policies and language planning practices have on the lives of communities and individuals. Any rigorous sociolinguistic study, which aims to explore the complexity of language socialisation of newly arrived members of an immigrant diaspora, requires an interdisciplinary and empirically founded in-depth analysis. However, the field often shows disjointed and somewhat contradictory argumentations and approaches from diverse disciplinary backgrounds. Social psychological perspectives and quantitative research paradigms are often criticised for being essentialist, while interactional and qualitative studies are often noted for lacking rigour and parsimony. This study aimed to reconcile some of these contradictions and combined quantitative and qualitative methods with the best intentions of taking the advantages from both angles in order to illuminate the complex social and sociolinguistic phenomena.

The new theoretical models notwithstanding, the very context of the research offered a unique opportunity to gain a better understanding of the language identity dynamics of a recent and rather unique speech community, the Sudanese in Australia. As is the task of contemporary sociolinguists to conduct research in unique language contact situations and contribute to the models of language shift (Clyne, 2003), this study aimed to make a contribution towards understanding the intricate interrelationship between language, culture and identity among Sudanese-Australians. Sociolinguistic studies of language use have used varied approaches incorporating a range of interdisciplinary angles and a wide range of methods: e.g. macro-sociolinguistic census-based studies, ethnography, conversation analysis and discourse analysis. Several models (Conklin & Lourie, 1983; Edwards, 1992; Fishman, 1991; Gal, 1979; Giles & Johnson, 1987; Kloss, 1966; Milroy & Wei, 1995) theorise why language shift occurs in some communities and why some other communities are able to maintain their mother tongue over several generations. Since the factors impacting the success of language planning are numerous and each community is different in its demography, history of immigration, attitudes and acculturation strategy, it is impossible to study all aspects in one study. It is, therefore, essential to explore unique linguistic, social and cultural settings and focus on selected specific dimensions. The unique context of this study offers this exceptional opportunity.

**Background**

Currently, there are approximately 30,000 Sudanese living in Australia and their number is increasing. The presence of this community (along with numerous other refugee communities in Australia) is the result of civil wars and Australia’s continuing commitment to assist the resettlement of refugees on a global scale. According to the UNHCR country report, Australia offered 12,000 new places each year in the past seven years under the Humanitarian
Program (UNHCR, 2004, p. 3). Africa is among the three regional priority areas and Australia has markedly increased the numbers and groups resettled from this continent over the last few years (UNHCR, 2004, p. 3).

This study is set in a highly unique linguistic context. It is a multilingual setting with sharp differences in the structure, corpus, status, and power features of each language represented. The Sudanese community, mainly from Southern Sudan, represents 4 separate Dinka language groups with four separate dialects: Dinka Bhar Al Gazel, Dinka Bor, Neur and Dinka Ngok. The majority of Dinka in Toowoomba are from the Dinka Bor group, but they are highly multilingual and use Arabic, Acholi and Kiswahili as local linguae francae. These “low-status” dialects are in sharp contrast with the “powerful” host language, English. Given these sharp differences and the complexity of multilingualism, it is crucial to explore whether 'status-seeking behaviour' (Ager, 2001) will shape the future of the less prestigious languages. The project, however, does not aim to carry out linguistic analysis (such as attrition, interference and code-switching).

The research was set in the context of regional Australia. This context is significant from two main perspectives. Firstly, there is increased policy focus on refugee settlement in regional and rural areas as they offer the ‘highest degree of community support’ (DIMIA, 2003 p. 27). The government recommends that ‘humanitarian entrants settle in regional areas to enhance their prospects of early employment and help meet regional economies’ demand for semi-skilled workers’ (DIMIA, 2003 p. 27). With this long-term strategic plan, the settlement of refugees in regional areas will be a high research priority from policy perspectives. Secondly, the regional context (as opposed to major urban) is a strong factor in language shift studies. It is well documented in the literature that regional and rural communities have different language maintenance shift patterns due to the demographic characteristics. The project sought empirical evidence from Sudanese immigrants about their lived experiences of the AMEP program.

The language policy context

The two main options available to people, who wish to migrate to Australia, are the program for skilled and family migrants and the humanitarian program for refugees or those in refugee type predicaments (Department of Immigration and Multicultural and Indigenous Affairs, 2008). The humanitarian program is comprised of two entry types, namely, onshore and offshore. The offshore component is for those overseas at time of application and the onshore for those who are already in Australia and wish to claim asylum (Department of Immigration and Multicultural and Indigenous Affairs, 2008). During the period 2006-07 the Australian immigration department issued 11186 offshore visas and 1831 onshore visas, to make a total of 13017 visas granted on humanitarian grounds (Department of Immigration and Multicultural and Indigenous Affairs, 2008). Of the 11186 offshore visas 50.9% were offered to those from African countries and 20% were specifically Sudanese (Department of Immigration and Multicultural and Indigenous Affairs, 2008). This number is expected to decrease with only 30% of visas in 2007-08 allocated to applicants from Africa (Department of Immigration and Multicultural and Indigenous Affairs, 2008).

The Department of Immigration and Citizenship’s supports the settlement of humanitarian entrants through the Integrated Humanitarian Settlement Strategy (IHSS) (Department of Immigration and Multicultural and Indigenous Affairs, 2007). During 2006-07, the IHSS was able to assist 6230 refugee entrants, 5993 Special Humanitarian Program visa holders and 84 either permanent or temporary protection visa entrants (Department of Immigration and Citizenship, 2007). Sudanese refugees represented the largest group of
clients with 24%, followed by Iraq 14% and Afghanistan 14%, then Myanmar with 12% and finally, Burundi with 6% (Department of Immigration and Citizenship, 2007).

The Department of Immigration and Citizenship has a few publications (see e.g. ‘Beginning a Life in Australia’, and another booklet entitled ‘New Beginnings: Life in Australia’), which provide information to newly arrived migrants about the settlement services available to them. There is also information on the department’s website, most notably the sections on living in Australia. The department has also recently produced a DVD entitled ‘Australia: a new home’ to help newly arrived migrants settle successfully into Australian society. Many of the department’s publications are produced in different languages. For example, the booklet ‘Beginning a Life in Australia’ is published in 38 different languages and the DVD is available in seven different languages. Refugees and other humanitarian entrants have access to a wide range of essential services, which assist in their integration and settlement. These include language services such as translation and interpretation services, which are provided through the National Accreditation Authority for Translators and Interpreters (NAATI), and the free English language services through the Adult Migrant English Program (AMEP).

The Adult Migrant English Program was established to help new migrants with English language skills. The English courses are offered throughout Australia at different venues, principally TAFE colleges, and can be undertaken through full time, part time and distance learning modes (Department of Immigration and Citizenship, 2008). Depending on immigration department criteria eligible candidates can access the following number of hours of English language instruction. See Table 1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent adult migrants</td>
<td>up to 510 hours</td>
</tr>
<tr>
<td>Refugee and humanitarian entrants under 25 years of age</td>
<td>up to 910 hours</td>
</tr>
<tr>
<td>Refugee and humanitarian entrants over 25 years of age</td>
<td>up to 610 hours</td>
</tr>
</tbody>
</table>

The last two extended hours of instruction (910 and 610 hours) are only available to those who can show they have had low levels of schooling.

(Adapted from: Department of Immigration and Citizenship, 2008, p. 11)

To take advantage of the AMEP program there are a number of stipulations migrants must adhere to. They must register within 3 months of gaining permanent residency or arriving in Australia and they need to begin classes within one year of registering (Department of Immigration and Citizenship, 2008). Other language programs are offered to migrants through the Department of Education, Employment and Workplace Relations (DEEWR). The first two of these are employment related and the third is for school aged migrants. The two employment-related language programs for adults are the Language Literacy and Numeracy Program (LLNP) and the Workplace English Language and Literacy Program (WELL).

Language, Literacy and Numeracy Program (LLNP) is offered for those migrants who are having difficulty finding employment because of problems with literacy or low levels of English language ability. It provides migrants with up to 800 hours of language, literacy and
numeracy instruction (Department of Immigration and Citizenship, 2008). To be eligible for entry into this program applicants must register through Centrelink to be a job seeker and have either already completed the AMEP course or have not been eligible to access AMEP courses (Department of Immigration and Citizenship, 2008). Similar to the LLNP, the Workplace English Language and Literacy (WELL) seeks to improve migrants’ workplace literacy and language ability. It does this through providing funding, rather than courses themselves, to instruct workers in language, literacy and numeracy (Department of Immigration and Citizenship, 2008). The English as a Second Language for New Arrivals (ESL-NA) program was established for school aged migrants (under 18) who need English language support in order to enter mainstream schooling (Department of Immigration and Citizenship, 2008). From 1 January 2011 the Immigration (Education) Amendment Act 2010 amended the Immigration (Education) Act 1971 (the Education Act) to:

• remove annual administration fees for English courses;
• provide that New Zealand citizens who hold a special category visa may no longer be provided with English courses under the Act;
• extend the period for registering in an English course from three months to six months after a person's arrival in Australia;
• introduce a five-year timeframe to complete an English course, with an extension for clients with compassionate and compelling circumstances;
• simplify provisions relating to eligibility for English courses, including ensuring all clients provided with English courses in Australia are subject to the same eligibility restrictions;
• allow the Secretary to extend registration, commencement and completion timeframes for English courses retrospectively; and update the legislation to reflect current delivery arrangements.

The research

Approach and methodology

This project was based on the fundamental tenet that ‘communicative practices are constitutive of the culture of everyday life and that language is a powerful tool rather than a simple mirror of pre-established social realities’ (Duranti, 1997 p.3). The approach of this study is a unique combination of sociolinguistics and linguistic anthropology. Traditionally, in sociolinguistics researchers ‘take a broad view focussing on communities, and employing quantificational and ethnographic methods’ (Clyne, 2001 p. 142). Linguistic anthropology studies language as a ‘cultural resource and speaking as a cultural practice’ and it ‘draws its intellectual inspiration from interactionally-oriented perspectives on human activity and understanding’ (Duranti, 1997 p.3). Due to the sensitive context of dealing with refugees as well as the task of measuring intangible and highly complex phenomena, this research uses a mixed method research strategy. The methods selected for the purpose of data gathering reported in this paper included a survey interview and semi structured focus groups.

100 households of Sudanese background were approached and those with children in Australia were asked to participate in the survey. The survey was conducted during a face-to-face session in participants’ homes. Households were identified through various refugee service organisations and a snowball technique was applied to identify further potential participants. The aim of the survey was to collect quantitative data, which can be used to
draw the main language profile of the community. The quantitative method (survey) in this study was subsidiary to the qualitative in-depth interview method. The sociolinguistic survey included the following sections:

- Family demographics and background
- Time of transition/refugee journey
- Arrival and life in Australia
- Learning English
- Language abilities
- Perceived change in language abilities since arrival in Australia
- Language use in the family
- Social networks
- Language use outside the family home
- Identity and acculturation
- Future goals
- Perceived vitality of community languages
- Language attitudes
- Actors in language planning.

The main focus is on qualitative analysis of qualitative data. The benefits of this approach in the context of immigrant communities have been emphasised by a number of researchers in the field (see e.g. Holmes, 1997). This is a major novel aspect of language planning research.

Selection of participants

The approach to sampling in this project is driven by four main considerations: (1) informant accuracy, (2) data validity (3) a good spread across the community to ensure varied responses and (4) ethical questions. Since the project did not aim to draw accurate population parameters, but aimed to collect ‘cultural’ data, non-probability purposeful sampling was used to select participants (Bernard, 2002). A balance of 50/50 was sought according to gender and a good spread according to age. The minimum age was 14 for the survey and the interviews. Volunteer participants were sought among those Sudanese who have settled and lived in Toowoomba for at least 2 years. The two-year minimum period of settlement was important to allow some degree of development of social networks in the host country and to allow them to linguistically adjust (Colic-Peisker & Tilbury, 2003 p. 66). Volunteers were sought through the schools, various community events, through advertising in the local newspaper and through the various community organisations and church functions. A snowball technique was used to identify further potential individuals.

The findings

Participation in AMEP

Respondents were asked to indicate the number of hours they completed in the AMEP. Of the 75 respondents, 39 (52%) completed 510 hours, 28 (37.3%) completed the program only partially, and eight (10.7%) never attended the program (See Table 2). The majority of those who fully completed the program were females (69.2%) and the majority (75%) of those who never attended were males. Participants were also asked about their perceived benefit of the
AMEP and they rated the program according to usefulness on a 1-5 scale where “1” was “not useful at all”, and “5” was “most useful”. The mean score of all 70 respondents who answered was 3.43 with a mean score of 2.97 for males and 3.76 for females indicating a statistically significant difference according to gender (p=.014). After aggregating the responses into negative, undecided and positive, there were 15 (20%) respondents who disagreed with AMEP being effective, 19 (25.3%) were undecided and 36 (48%) found the AMEP effective. We tested for statistically significant differences across different transition countries using a chi-square test but we failed to identify differences between respondents transitioning through English-speaking African countries (e.g. Kenya and Uganda) and those coming to Australia via Arabic-speaking countries (e.g. Egypt, Northern Sudan) (p-value of .118).

Table 2: Participation in the AMEP program.

<table>
<thead>
<tr>
<th>Sex of respondent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Completed full AMEP</td>
<td>12 (30.8%)</td>
</tr>
<tr>
<td>Partially completed AMEP</td>
<td>15 (53.6%)</td>
</tr>
<tr>
<td>Never Attended AMEP</td>
<td>6 (75.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>33 (44.0%)</td>
</tr>
</tbody>
</table>

Perception of the AMEP program

Participants were asked whether they thought the AMEP program was effective in helping them learn English. The responses to this question were coded according to a Likert scale; therefore, the responses indicated degrees of agreement and disagreement. The middle of the scale was coded as “undecided” or “not sure”. The total mean score of all 70 respondents who answered was 3.43. The mean score of the 29 males who responded was 2.97 and for the 41 females it was 3.76. See Table 3 below:

Table 3: Perceived effectiveness of AMEP.

<table>
<thead>
<tr>
<th>Q21 Is AMEP effective in helping with English</th>
<th>Sex of respondent</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>2.97</td>
<td>29</td>
<td>1.117</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3.76</td>
<td>41</td>
<td>1.356</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.43</td>
<td>70</td>
<td>1.314</td>
</tr>
</tbody>
</table>

Percentage positive and percentage negative ratings were also calculated. After combining the responses into negative, undecided and positive ratings, there were 15 (20%) respondents who disagreed with AMEP being effective, 19 (25.3%) were undecided and 36 (48%) indicated they were in agreement with AMEP being effective. See Table 4 below. In order to test for significant difference across genders, we used the chi-square test, with the null hypothesis being that there was no difference in perceived effectiveness of AMEP between males and females. The results showed a significant difference across genders (p = .014). See Table 5.
Table 4: Perceived effectiveness of AMEP by gender.

<table>
<thead>
<tr>
<th>Sex of respondent</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>8</td>
<td>7</td>
<td>15 (20%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>12</td>
<td>7</td>
<td>19 (25.3%)</td>
</tr>
<tr>
<td>Positive</td>
<td>9</td>
<td>27</td>
<td>36 (48%)</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>41</td>
<td>70 (100%)</td>
</tr>
</tbody>
</table>

Table 5: Perceived effectiveness of AMEP by gender – Chi square test.

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>8.577a</td>
<td>2</td>
<td>.014</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>8.749</td>
<td>2</td>
<td>.013</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>5.388</td>
<td>1</td>
<td>.020</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference according to gender can be explained by the women’s overall lower level of English. It seems that the program was more geared to the lower English level learners who were mostly women. The general issues, however, applied to both genders. In the interviews participants of both genders raised the issue of not having sufficient amount of free tutoring through the AMEP, as the 510 hours were not sufficient for most learners to achieve a functional level of English. The lack of education in the first language and a general lack of schooling was a main factor which made studying at TAFE even more challenging for most Sudanese learners, especially women, as girls tended to have even less educational opportunity in South Sudan (Hatoss & Huijser, 2010). Even though humanitarian entrants were given extra hours (610, or if under the age of 25, they were given 910 hours), Sudanese refugees often dropped out of the program due to the pressures of finding casual employment or child rearing. In the focus group, a group of young men talked about the difficulty in securing employment and supporting their families, and at the same time attending the AMEP classes during the day. They felt it would have been more effective if the classes were offered in the evening so that they could have the flexibility to work and study at the same time. See Excerpts 1 & 2.

Excerpt 1 - Free provision of hours is too short:

*AMEP is not effective in help people learn good English because 510 hours are not enough for the new beginner who started learning English for the first time. You can just finished 510 hours before learn English.*

Excerpt 2 – Studying English and looking for jobs:

*I went to TAFE for a long-time to get a job really . . . but English, I can’t learn it it’s . . . too much for me my hours finished at TAFE and then returned to Mission Australia looking for job . . . but when you are working too many hours you can’t get English . . . and when you don’t have English you can’t find job good (Focus Group excerpt)*
Another recurring theme in the interviews was the issue of mixed-level classes. The local TAFE did not offer many levels and Sudanese refugees were grouped together so that beginners were studying in the same class with more advanced learners. Due to the diverse educational pathways (and mainly their lack of) in South Sudan and in the transition countries, Sudanese refugees have very diverse levels of abilities in English. Some were fairly fluent in speech due to the years of education in Kenya, but their level of writing was lagging behind. Some others were not able to understand simple instructions or write their name in English. See Excerpt 3:

Excerpt 3 – Mixed classes; Finding jobs:

| Interviewee 6: | I came here in Australia long time ago, in 2001. Seven years ago everyone went to TAFE to learn English. I think the way we learned English in TAFE was not enough for myself. I did it for three weeks or one month, and then I stopped learning English as I found a job… farm work. I farm work from 2001 up to now I’m still working. |
| Facilitator 1: | So did you finish your 500 hours? |
| Interviewee 6: | No, just one month. |
| Facilitator 1: | Just one month because you wanted to work? |
| Interviewee 6: | Yeah when I went to TAFE I didn’t understand anything. When I went to class some people they are good class 2, class 3, class 4 they are good in English. You can go to learn English, but they are mixed together in one class. |

Learning English in other ways

In the survey and in the interview we asked respondents to indicate if they learnt English through other avenues, such as voluntary English language programs or the churches. The results have shown that a significant proportion of the respondents had participated in English lessons provided through voluntary or grass-root initiatives. Of the 75 respondents, 21 (28%) learnt English at TRAMS, which is the Toowoomba Refugee and Migrant Services Centre. Some others also learnt English at church (21.3%), from volunteers (9.3%), at work (6.7%), at Mission Australia. Again, we tested for a significant difference according to gender and found that TRAMS was significantly more utilised for English lessons by females than by males (p-value of .001), but the other channels of grass-root programs did not show any gender differences. So, there was no statistically significant difference in the male and female groups in learning English from church or volunteers.

Satisfaction with own level of English

Participants rated their satisfaction with their English skills on a 1-5 scale. These responses were, then, converted into a 3-point scale indicating “positive”, “undecided” and “negative” ratings. Of those who had negative ratings of their skills in English, four (30.8%) were male and nine (69.2%) were female. For those undecided, six (40%) were male and nine (60%) were female and for those with positive ratings, 23 (48.9%) were male and 24 (51.1%) were female. See Table 6.
Table 6: Satisfaction with own level of English.
Q23 Happy with level of English * Sex Cross-tabulation

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Negative</td>
<td>4 (30.8%)</td>
<td>9 (69.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>6 (40.0%)</td>
<td>9 (60.0%)</td>
</tr>
<tr>
<td>Positive</td>
<td>23(48.9%)</td>
<td>24(51.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>33(44.0%)</td>
<td>42(56.0%)</td>
</tr>
</tbody>
</table>

The mean score for happiness with their level of English for all respondents was 3.63. For males, the mean score was 3.76 and for females 3.52. There is no conclusive evidence that those who did AMEP would be more satisfied than those who did not as can be examined by the Pearson Correlation significance of 0.159. Due to the categorical nature of the Likert scale, the Chi-square test was used to compare differences in the happiness rating between English-speaking and Arabic-speaking transition countries. The null hypothesis was that there was no difference between the happiness ratings of respondents who transitioned in these countries. With a level of significance of 5%, we rejected the null hypothesis since the p-value of 0.026 is significant. Hence, we can state that there was a significant difference in the happiness ratings of Uganda/Kenya and Egypt, and it is evident that respondents from Uganda/Kenya were happier with their skills in English. See Tables 7 and 8.

Table 7: Happiness with own English ratings cross-tabulation: Country of transition.

<table>
<thead>
<tr>
<th>Q12_Country</th>
<th>Q23_HAPPY</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda/Kenya</td>
<td>Negative</td>
<td>3</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Egyptian</td>
<td>Undecided</td>
<td>10</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>13</td>
<td>14</td>
<td>41</td>
</tr>
</tbody>
</table>

Table 8: Happiness with own English chi-square test: Country of transition.

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>7.337</td>
<td>2</td>
<td>.026*</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>7.514</td>
<td>2</td>
<td>.023</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>6.566</td>
<td>1</td>
<td>.010</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>68</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next, we used the chi-square test to compare for differences in the happiness level of English for those who learnt in transition and those who did not. The null hypothesis was that there was no difference in happiness levels of English for those who learnt English in transition and those who did not. With a 5% level of significance, the p-value of 0.022 is significant; hence the null hypothesis was rejected. Therefore, we concluded that there was a significant difference in happiness levels for those who learnt English in transition and those who did not. See Tables 9 and 10.
Table 9: Happiness with own English according to transition route: Cross-tabulation.

<table>
<thead>
<tr>
<th></th>
<th>Q23_HAPPY</th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Undecided</td>
<td>Positive</td>
<td>Total</td>
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<tr>
<td>Q13.1 Learning English in transition</td>
<td>Yes</td>
<td>2</td>
<td>4</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>11</td>
<td>11</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>13</td>
<td>15</td>
<td>47</td>
<td>75</td>
</tr>
</tbody>
</table>

Table 10: Happiness with own English according to transition route - Chi-square test.

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>7.666*</td>
<td>2</td>
<td>.022*</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>8.183</td>
<td>2</td>
<td>.017</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>7.305</td>
<td>1</td>
<td>.007</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is evident that those who learnt English in transition had proportionally more positive responses hence were happier than those who did not. Some of the responses we were given with regards to satisfaction with own English included references to an endless journey of learning and the constant need to continue to improve one’s own skills, especially in literacy skills as well as developing and refining pronunciation. See Excerpt 4.

Excerpt 4:

   I arrived here I do not know how read and write but now I am able to read and write. Conversely, although I am happy with my English skills I still need more learning so that I could be able to converse very fluently as well as reading and writing.

   Well actually the only different is accent and it is endless language, the language is endless you just learn and you stop there and you will say that I have learn now enough, no, it is something continuous. So I will be satisfied when I get to this.

   Some responses related to the interrupted schooling in Sudan due to the Civil War, which made it extremely hard for participants to get back into education and learn in a formal setting (Hatoss & Huijser, 2010). See Excerpt 5.

Excerpt 5:

   I can communicate with people but it is not enough due to the fact that I am not able to read and write because Sudan war has interrupted my study and you know when you spent longer time without study everything will evaporate from your mind so now I have nothing in my mind.

   In fact I thank government for 510 hours I did at TAFE, which has done little improvement, and I still need more hours to learn more so now I am neither happy
nor disappointed because I am able to communicate with other only that I am good in reading and writing. (Survey 005, MM5)

As this excerpt demonstrates respondents were extremely polite and expressed their gratitude for the provision of free English classes, but the issue of not developing a level of proficiency, which is necessary for jobs in Australia, was a recurring one. In the next section three cases will be discussed in relation to the factors, which have led to a limited satisfaction with the AMEP or a limited ability to engage in the program.

Case Study 1

D. is a 27-year-old male Dinka speaker from the Upper Nile region (Dinka Bor dialect) who is married with three children (aged 1, 3 and 5). He and his wife were both born in South Sudan, their oldest child in Kenya and the two other children in Australia. All the family members indicated speaking Dinka language as their first language. D. completed 14 years of education prior to arriving in Australia, including three years of schooling in Dinka and Arabic in South Sudan and an additional 11 years in English and Kiswahili in Kenya. His spouse completed seven years of education in Kenya. He started learning Arabic and English at the age of 14 and Kiswahili at the age of 18. As many other Sudanese refugees, D. spent extended years in transition in various refugee camps, including Pinyudo in Ethiopia where he spent three years. Then, he went to Pachalla where he was for one year before transitioning to the Kakuma refugee camp in Kenya where he spent 11 years waiting to be resettled. Finally he was given refugee visa to enter Australia in 2004.

He attended the AMEP class and completed approx. 100 hours there. While he rated the AMEP program as “very helpful” and his English as “4” on a scale from 1-5, he spoke about the difficulties in making the most out of the AMEP. As he explained he dropped out of the AMEP program after a couple of weeks, as he got a job in another city and also because he had an accident. Later he found another job working on a farm and started the tertiary preparatory program at the university, so he did not return to the AMEP program as he was caught between the need to make a living and prepare for his university studies. But, the real reason was, that he felt that the AMEP program was below his level of English and he did not really progress by attending those classes. See Excerpt 6 below:

Excerpt 6:

Interviewee: I went to TAFE I spent I think I have been there for two weeks and left back to Adelaide hunting for a job. I went there and I got a job there and for my first weeks in the job in Adelaide there I had an accident and I left the job and come back to my family.

Facilitator 1: Here in Toowoomba or . . . ?

Interviewee: Here in Toowoomba. I went and I left the family. I went there alone so that was what I had with TAFE. That was only two weeks and I stopped that and I came back in 2005, June 2005 to Toowoomba and I started . . . I get employed here with farmers at a place called Wyreema in a western part of Toowoomba. I had been in that job for about a year and left it. . . . when I was that job I was studying preparatory course in university while I was working with that Wyreema farmer in 2006, and I was succeeded in the tertiary preparatory course. That was
Preparing me for my university studies. I was called there I left the job towards the end of 2006 and prepare for my bachelor’s degree.

Facilitator 1: For uni. OK.
Facilitator 1: You’re not in the TAFE . . . you didn’t go back to the TAFE English or . . .
Interviewee: I didn’t go back to the TAFE.
Facilitator 1: OK so you don’t study at the TAFE anymore.
Facilitator 1: You only went to the TAFE English for a few weeks but how effective did you think the English was there or the classes were there that they were teaching?
Interviewee: The English at TAFE was actually not effective to someone like me because it was similar to what I had already passed when I was in Kenya so it was good for those who were under me because they were actually profiting and benefiting to them and I thought to myself was repetition of what I have already done.

Case Study 2

Esterina (34) is a speaker of Azande from South Sudan, married with four children (16, 9, 7, and a baby of 2 months). All her family were born in South Sudan except for the youngest who was born in Australia. She had no formal education prior to arriving in Australia and only her oldest daughter had any formal schooling (she attended an Arabic school in Egypt). She started learning English at the age of 33 as her third language as she learnt Arabic from the age of 12. Her spouse had the same pattern of language learning history. She also spent a lengthy period in transition and arrived in Australia via Egypt in 2003. She had to drop the AMEP program when she had a baby, but even when she attended she felt that the program was not particularly useful or effective as she was put into a class with more advanced learners and therefore she was not able to follow the lessons. See Excerpt 7 below.

Excerpt 7:

Facilitator: And you attended the AMEP TAFE English classes?
Interviewee: Yes I did attend TAFE for 4 months.
Facilitator: How many hours have you completed?
Interviewee: I’m not sure because we usually go there 9:30 and then we finish up to 2:30, so I don’t know how many hours I’ve done.
Facilitator: Are you still going?
Interviewee: I just stop for maternity leave.

As we can see, the mixed-level classes were again the source of problem and in her case, the level was too advanced. It is understandable that a mother of four children is extremely busy with the child rearing duties and general household duties and has limited time for her own education. If that education does not provide the comprehensible input, which is required for her to develop her proficiency, it becomes an ineffective, time-consuming exercise. Some other respondents, who also dropped out of the program due to these factors, reported learning some English from their own children. However, this informal learning did not lead to the level of English, which is useful beyond the household or general conversational purposes.
Case Study 3

Case Study 3 is a Dinka (Dinka Bor dialect) speaking female respondent (age= 43) with five children. She, her husband and her oldest child were born in Sudan and her other four children were born in Kenya during the refugee transition years. She completed 14 years of education prior to coming to Australia of which 12 years were in Arabic in Sudan and 2 years were in English in Kenya. In Australia she joined the AMEP and completed Certificate II in English as well as Certificate III in Childcare at TAFE. She can be described as a lifelong language learner, as she learnt Dinka from birth, Arabic from the age of 5 at school, English from the age of 13 and Kiswahili from the age of 35. She spent 10 years in Ethiopia and another 10 years in Kenya of which seven years were in the Kakuma refugee camp. She arrived in Australia with her family in 2003 on the Humanitarian visa and she completed the full allowance of 510 hours of the AMEP program.

When asked about her view on the usefulness of the AMEP, she gave a rating of 2 out of 5, meaning “not very useful”. She works as a full-time childcare worker. When asked about her English she rated herself as having the lowest proficiency in the family in all the four macro-skills: listening, speaking, reading and writing. In the interview she talked about the decline of her children’s mother tongue and she expressed her concern about their low level of Dinka language abilities. She uses Dinka as the main home language with all the family members except for the youngest child (9) with whom she uses English. The language use patterns in the family, however, are asymmetrical, as the children tend to address the parents in English rather than in Dinka. While the oldest two children also use the Dinka language with the parents, but use English only among themselves, the youngest child exclusively uses English with everybody.

One of her life goals was to improve her English, but this has proven to be rather difficult for a number of reasons. One of the main issues was to do with the differences between the English she learnt in Kenya and the English that was taught in Australia. She particularly found the Australian accent difficult to understand and acquire. On the other hand, participants were unhappy with the diverse accents represented by their English teachers, who were not native speakers of English, but immigrants. Learners had to adjust to many different accents including Chinese and Arabic. See Excerpt 8 below for varied interviewee comments:

Excerpt 8 – “Australian and other accents”:

1. When we came we knew a little bit and then we were just confused ... So we feel like we never got anything extra, something to add to it. Unless after we spend two years, the accent changed from how we talked to the Australian way of talking English. So this is the only slight thing that changed but otherwise we feel like we never added anything.

2. When we first came I think the teacher had a Chinese background and she had an Australian accent really. They just kept me between class one and class two because when I do my paperwork I did it good but if they’re talking to me I can’t understand because of the Australian accent.

3. Yes, because when I first came I couldn’t understand the accent of Australia and if you can’t understand what the teacher is
talking about it will make everything confusing, hard and difficult.

4 You see, we fall into two bad. They’re not actually Australian, they are migrants like us. First of all we started with a Chinese and then they have a completely different accent. It’s not like Australian.

5 When we came here we got an Arabic teacher. She’s Sudanese, she’s Arabic, she also has a different accent. So we fall into different ones who taught us. This is where we got confused. We never get exactly the Australian accent. (translated from Arabic)

In summary, the findings of this study point to major gaps in the existing AMEP policy, which aims to support immigrants’ English language development. In the first case study, the main obstacle to learning English was the desire and the immediate need to make a living and earn an income to support the family members in Australia as well as those left behind in Sudan. The survey results have shown a high dropout rate for Sudanese AMEP clients and one of the main reasons for this was that they managed to obtain low-paid physical labour either in the local farms or in the abattoir. Taking these jobs meant that participants were not able to attend the classes offered during the day. The second case study has highlighted the issue of the mixed level classes as well as the challenges women faced when they had a baby. Typically, when women gave birth to a child, they dropped out of the AMEP program and often did not continue with their studies afterwards, as in Sudanese culture the woman takes the primary responsibility for taking care of the children, while the man is primarily responsible for providing the income for the family. These traditional expectations still inhibit Sudanese women in their career and educational aspirations. The third case study exemplified that even someone with multilingual skills can find it extremely challenging to learn a new language in a new country such as Australia, as the Australian accent was particularly challenging. In addition, learners found it rather confusing when they had teachers of various ethnic backgrounds and had to learn to adjust to those ethnic English accents. In the focus groups, people talked about the issue of the mixed-level classes and the fact that these mixed levels did not facilitate learning. The more advanced learners felt that they did not gain anything new, while the beginners felt that the classes were too challenging and the content was not comprehensible to them.

There was also a major underlying factor, which impacted upon Sudanese learners’ ability to progress in their English. This was to do with their lack of prior education and lack of first language literacy skills. As most refugees spent extended years in transition, their schooling was interrupted and many of them did not have any formal schooling back in South Sudan. The main factors affecting the learning of English can be summarised as:

- Prior studies and literacy background: English in transition and L1 literacy
- Balancing work, family and study
- Expectations to financially support family members in South Sudan
- Mixed level classes: a lack of support for learning English literacy as first literacy.
Conclusion

As this study has shown, the effectiveness of standardised language support programs needs to be examined using empirical data. Respondents in this study have expressed their dissatisfaction with the AMEP program, as it was not geared to their level of proficiency. Also, their level of satisfaction with their own English abilities varied, but generally speaking there was a great deal of dissatisfaction and feeling of the need to continue with the English studies. Respondents found that the level of English they developed was not sufficient for them to find employment.

There were also many other factors, which impacted the perception of the AMEP program and its effectiveness. Respondents mentioned the difficulty of adjusting to the Australian accent, while others talked about their personal life, which meant that they had to leave the program for various personal reasons. Such interruptions for women were often associated with child birth, for men, typically were associated with getting casual low-paid jobs to support their families.

This research has shown that there is an urgent need to conduct a larger-scale empirical research about the implementation of language policy concerning the English language development of immigrant groups, especially those who come from refugee background. Language policies can only be effective if they provide the best and most effective support for the learners. As Sudanese refugees enter the AMEP program with extremely mixed prior learning experiences, there is a need to conduct a more in-depth assessment of their learning needs as well as their target needs. By the term “learning needs”, I refer to the ability to learn generally and to the ability of using effective language learning strategies. By the term “target needs”, I refer to the actual proficiency targets that they aim to achieve and the career goals (Hatoss, O’Neill, & Eacersall, 2012) in which they are likely to use the language. Refugee support English language programs need to be based on the principles of ESP curriculum design; that is designing tailor-made programs for specific purposes.

This paper has highlighted the need for language policy research and policy evaluation to be informed by empirically-based bottom-up approaches (Hatoss, 2013) to the study of policy and its effects. It is only through the discourses and the empirical data provided by those impacted by the policy that informed decisions can be made to improve the language program provision to immigrants.

References


Quality teaching; ‘Classroom Pedagogical Alignment’ and why teachers teach as they do

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a New South Wales Department of Education and Training; b University of Newcastle; c University of Newcastle

Abstract: This article presents the results of an observational study of eight experienced teacher classroom practices and of those teachers’ comments on why they teach as they do. Sixty-one observations and coded analyses, using the New South Wales Quality Teaching model, were made of pedagogical strategies as they taught in social studies classrooms in Australia. Collaborative interviews were held following communication of observation results. Interpretations were made of what influenced classroom practice. ‘Classroom Pedagogical Alignment’ was found to be a key explanatory factor with standardised tests and teacher accountability measures limiting the freedom teachers believe they have to teach for excellence.

Keywords: pedagogy; quality teaching; curriculum alignment; secondary education

Introduction

Teacher change research literature encompasses a wide variety of approaches to running an effective school that is financially efficient and in which students learn well. Educational policy approaches are primarily focused on increasing standards and regulations, teacher accountability, articulating curriculum, maximising learning time, increasing school-level management, increasing strong district and principal leadership and rethinking the organisational structures of schools (Buchanan, 2012; Connell, 2009; Desimone, Porter, Birman, Garet, & Yoon, 2002; Ingvarsson & Rowe, 2008; Slavin, 2002). Additionally in recent years an increased emphasis has been placed on the qualities of the teacher in the classroom as an important factor that can also improve student learning outcomes (Gore & Ladwig, 2006a; Gore, Ladwig, Amosa, & Griffiths, 2008; Griffin, McGaw, & Care, 2012; Ministerial Council on Education Employment Training and Youth Affairs, 2008; Newmann & Associates, 1996; Queensland School Reform Longitudinal Study, 2001; Ramsey, 2000; Roelofs & Terwel, 1999; Vinson, 2002). Nevertheless, despite multiple avenues of inquiry, research into best practice in teacher change is littered with stories of failure and sustainable change remains largely elusive (Hargreaves & Fullan, 1998; Hargreaves & Goodson, 2006; Sarason, 1990).

This study provides a glimpse into why this may be so (Edge, 2012a, 2012b). Testing and accountability regimes current in most nations encourage teachers to apply a large amount of power over what their students learn. Teachers feel the need to avoid distraction, to keep to key learning points, to dissuade excursions down non-examinable tracks. Student self-direction and self-reflection are not seen as important when the teacher is being judged on what students can exhibit in their tests. The teacher aligns all elements of the classroom context to further the endpoint outcome – a test score that purports to represent student-learning outcomes. The assumption is that tighter ‘links’ or ‘coupling’ need to exist between educational policy (e.g. curriculum and assessment) and how teachers’ teach (Goldspink, 2007; Rowan, 2002). It may all seem so efficient but it creates mediocrity. It removes independent teacher ability to allow students to learn in other ways and on other topics. It
reduces learning to a fixed set of facts and skills. Classroom Pedagogical Alignment is a defensive, minimalist teaching strategy.

**Background to the study**

One of the central questions facing education systems and educational researchers is how to improve student-learning outcomes. This reasonable query has led to much scrutiny of impact of effective school management and teacher quality on student achievement (Buchanan, 2012; Gore & Ladwig, 2006a, 2006b; Pickering, 2007; Vinson, 2002). In Australia, the ‘The Better Schools Plan’ (the Gonski Report) (Australian Government, 2013) focused on improving five core areas of schooling: quality teaching, quality learning, empowered school leadership, meeting student needs and greater transparency and accountability; and providing funding to those who are most in need of such support. Finland, which is seen as having a very successful education system, values the early recognition of learning difficulties, social and/or behavioural problems with professional support provided to students as early as possible (Sahlberg, 2011) and this has influenced some of these Gonski reforms. Additionally the recent formation of the Australian Institute for Teaching and School Leadership (AITSL) (Australian Institute for Teaching and School Leadership, 2012) has provided a framework of teacher standards and promoted classroom-focused professional learning. In New South Wales (NSW) in 2012 the Department of Education and Communities (DEC) focused policy directions through the ‘Great Teaching and Inspired Learning’ initiative (New South Wales Department of Education & Communities, 2012a, 2012b, 2012c), and the Queensland College of Teachers (Queensland College of Teachers, 2012) likewise argued that teachers need to be developed, supported and rewarded to create inspired learning and lifelong capacities in students and that this was required in pre-service teacher education as well as during their careers to develop content and pedagogical skills to support effective teaching. However, schools are dynamic, unpredictable and non-linear organisations operating in an ever changing external environment and it is difficult to predict which factors will influence a teacher’s instructional decisions (Cohen & Stewart, 1995; Lemke & Sabelli, 2008; Mason, 2008a, 2008b) despite important evidence of how crucial individual teacher decisions are to student outcomes (Hattie, 2003).

Educational policymakers at all levels have pressed for substantial change in the technical core of schooling, actual classroom instruction, and there has been a move to specify more precisely what teachers should teach. Increased teacher accountability for student learning framed on standards and calibrated by state-wide testing has become more common (Plank & Condliffe, 2013; Spillane, Parise, & Sherer, 2011). The notion of ‘coupling’ has been used to frame our understanding of the strength of links between the institutional environment such as external administrative bodies and classroom instruction. There are advocates for both ‘loose’ and ‘tight’ coupling of these facets of education (Aurini, 2012; Bidwell, 2001; Goldspink, 2007; Hallett, 2010; Plank & Condliffe, 2013; Powell & Colyvas, 2008; Spillane, et al., 2011). ‘Loosely coupled’ classrooms are relatively independent of administrative oversight, supposedly producing variable goals for classroom instruction with little evidence of direct connection between classroom practice and student achievement as defined by the educational administration (Hallett, 2010; Rowan, 1990, 2002, 2006; Spillane, et al., 2011). Current perceptions are that ‘tight coupling’ between the administration of education and classroom interactions can create legitimacy and support classroom practice, drawing support from notions of ‘constructive alignment’ (Biggs, 1996; Biggs & Tang, 2007; Jones, 2006; McLoughlin, 2001) and ‘curriculum alignment’ (Richardson, 1998; Rowan, 1990, 2002). In this context, ‘alignment’ is defined as the extent to which curricular expectations and assessments are in agreement and work together to
provide guidance for educators’ efforts to facilitate students’ progress toward desired academic outcomes (Roach, Niebling, & Kurz, 2008).

The principles of ‘constructive alignment’ were developed by Biggs (1996) and are primarily located within the higher education literature. ‘Constructive alignment’ is a means of verifying and ensuring that learning objectives are aligned with both the teaching activities and assessment to measure the level of students’ achievement in a course (Biggs & Tang, 2007; Jones, 2006; McLoughlin, 2001; Vitale, 2010). In the broader educational context, these principles are consistent with ‘outcomes-based education’ (OBE) where “standards are stated upfront and teaching is tuned to test and meet them, assessment being the means of checking how well they have been met” (Biggs & Tang, 2007, p. 5). From a similar perspective, ‘curriculum alignment’ involves a standardised system of input and output controls over curriculum goals, instructional materials and predetermined testing benchmarks for students (Richardson, 1998; Rowan, 1990, 2002). Within this paradigm, standardised textbooks, framed around syllabus content knowledge and skills serve as ‘input controls’ and guide teachers’ decisions about instructional processes. ‘Output controls’ involve standardised tests that are centrally developed and uniformly administered and scored to assess student achievement (Boyd & Crowson, 2002; Graham & Neu, 2004). This highly rationalised approach to education views teaching as a ‘routine technology’ where centralised decision making and standardised work practices are adopted to promote efficiency by focusing teachers’ efforts on clearly defined goals (Rowan, 1990). It would seem to follow that accountability in the education system is a major aim of ‘curriculum alignment’ (Graham & Neu, 2004).

Opinions differ as to the impact of these mechanisms on student learning outcomes and instruction. There is some evidence that high-stakes testing has increased student achievement (Ayres, Sawyer, & Dinham, 2004; Dee & Jacob, 2009; Jacob, 2005; Neal & Schanzenbach, 2010; Spillane, et al., 2011; Wong, Cook, & Steiner, 2009) while other evidence indicates that these initiatives have little lasting impact (Fuller, Wright, Gesicki, & Kang, 2007; Koretz, 2008; Lee, 2006). Further, Plank and Condliffe (2013) reported that classroom quality is lower when teachers are under pressure to improve student test performance. Recent research in neuroscience (Christoff, 2008; Clement & Lovat, 2012; Immordino-Yang, 2008; Immordino-Yang & Damasio, 2007; Snow, 2008) offers some support to the latter point of view, with one researcher making the point that the “development of skills that are goal directed are modulated by a convergence of social and emotional reactions and desires, as well as cultural knowledge” (Immordino-Yang, 2008, p. 71) and consequently not easily attuned to standardisation. Social and emotional reactions are a source of variability between learners and as Snow (2008) argues, it is important to design pedagogical and assessment tools that test and develop students’ functional abilities without penalising them for constructing knowledge in different ways. Further, while ‘curriculum alignment’ is seemingly appropriate for school improvement and effectiveness, critics have argued that such controls reduce the professional autonomy of teachers and this may not increase educational ‘efficiency’. Windschitl (2002) argued that ‘curriculum alignment’ reinforces teacher-centred or objectivist approaches rather than student-centred approaches to teaching and discourages teachers from spending time inquiring into their own practices. It also can be seen as limiting teacher commitment to change as they feel disempowered, deskilled and de-professionalised, denied the capacity to make a difference in their classrooms (Goldspink, 2007; Rowan, 1990; van den Berg, 2002). It may be possible to clarify such fundamental differences of opinion by entering classrooms to identify influences on instruction and explore teachers’ perspectives on such influences.
The context of the study

This study was undertaken in secondary Stage 4 and 5 Human Society and Its Environment (HSIE) classrooms in one region of NSW in Australia. The HSIE Key Learning Area (KLA) covers a wide range of Humanities and Social Science subjects. History and Geography occupy the majority of HSIE teaching time in these Stages, where students are typically aged between 13 and 15 years. New South Wales is the largest state of Australia with the newly named NSW Department of Education and Communities (DEC) providing the education for approximately 760,000 students in 2228 public schools. The NSW curriculum is developed by the then NSW Board of Studies (now the NSW Board of Studies, Teaching and Educational Standards or BoSTES) and delivered through seven Key Learning Areas or KLAs in six stages (Stages 1-3, K-6; Stage 4, Years 7/8; Stage 5, Years 9/10 and Stage 6 Years 11/12). The BoSTES is a quasi-autonomous government body with responsibility for curriculum, assessment procedures and teaching registration in all schools, including the private sector. At the time this study was undertaken the HSIE curriculum requirements and assessment procedures (including the outcomes-based School Certificate external examination and discontinued in 2012), which directly influenced the classrooms in this study were outlined in the Stage 4/5 History and Geography syllabus documents (New South Wales Board of Studies, 2003a, 2003b). Commercially-developed textbooks written to meet curriculum requirements usually guided teachers’ decisions about instructional processes and were widely used. Within schools, in meeting accountability requirements, syllabus standards were reported through A to E achievement scales described in the Curriculum planning and programming, assessing and reporting to parents K–12: policy standards document (New South Wales Department of Education & Training, 2006) and the School Certificate at the time of the study involved standards-referenced external examinations that judged student achievement in relation to these syllabus outcomes as well as teacher judgment as to which prescribed descriptor best described the achievement of that student (New South Wales Board of Studies, 2005a, 2005b).

Research approach

This study had a mixed methods design in two sequential phases (Edge, 2012a, 2012b). The study addressed two research questions:

1. What variation in pedagogy is exhibited in classroom instruction in Stage 4/5 HSIE classes in NSW public secondary schools, based on repeated classroom observations?

2. How do teachers’ perceptions about the organisational design of schools influence their choice of classroom instructional practices?

The first phase of this study was based on 61 observations and coding of observed pedagogy, using the NSW Quality Teaching model (NSWQTM) and its three dimensions of good teaching (New South Wales Department of Education & Training, 2003a, 2003b, 2003c, 2003d). Participating teachers became involved after an invitation outlining the purpose of the research and information about what they would be asked to do, the time involved and privacy issues relating to data collection was sent to teachers in a single DEC region to the north of Sydney. The region was chosen purely for reasons of access but it did provide a mix of city and regional type schools and perspectives and was often used as a test case region for many commercial surveys. Eight HSIE teachers from five public secondary schools accepted the invitation. Of the participants, four were HSIE Head Teachers, one had been relieving as a Head Teacher HSIE for over twelve months and one was a Head Teacher...
Administration. The other two teacher participants each had over 26 years of teaching experience. They could thus be described as experienced teachers.

Models of pedagogy, as guides to good teaching practice, have been part of educational discourse for some time. In this study, the NSWQTM (see Table 1) was the model of choice as it incorporates a pedagogy that constitutes good classroom practice based on research carried out in a broad range of real classrooms, it was embraced by the NSW DET at the time, and it was used in NSW classrooms as a tool to self-monitor teachers’ classroom practice (Ladwig, 2005). The key features of the NSWQTM are as below:

Table 1: The dimensions and elements of the NSWQTM.

<table>
<thead>
<tr>
<th>Intellectual Quality</th>
<th>Quality Environment</th>
<th>Learning</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep knowledge</td>
<td>Explicit quality</td>
<td></td>
<td>Explicit quality</td>
</tr>
<tr>
<td>Deep understanding</td>
<td>Engagement</td>
<td></td>
<td>Engagement</td>
</tr>
<tr>
<td>Problematic knowledge</td>
<td>High expectations</td>
<td></td>
<td>High expectations</td>
</tr>
<tr>
<td>High-order thinking</td>
<td>Social support</td>
<td></td>
<td>Social support</td>
</tr>
<tr>
<td>Metalanguage</td>
<td>Students’ self-regulation</td>
<td></td>
<td>Students’ self-regulation</td>
</tr>
<tr>
<td>Substantive communication</td>
<td>Student direction</td>
<td></td>
<td>Student direction</td>
</tr>
</tbody>
</table>

The Intellectual Quality (IQ) dimension is the central pedagogy of the NSWQTM and is the dimension that has survived essentially unchanged from the original work on Authentic Pedagogy in the USA (Newmann & Associates, 1996). Such pedagogy focuses on producing deep understanding of important, substantive concepts, skills and ideas, treats knowledge as something that requires active construction, requires students to engage in higher order thinking and to communicate substantially about their learning. In developing a Quality Learning Environment (QLE), teachers need to work productively to set high and explicit expectations where the focus is clearly on learning. In creating Significance (SI) teachers need to make clear connections with contexts outside of the classroom and students’ prior knowledge and identities, including cultural perspectives. Creating Significance helps to make learning more meaningful for students.

Classroom observation data relating to single teacher class-cohorts was gathered repeatedly over a 10-week period (between late July and early October in 2004) by direct observation on a weekly basis, one observation per week with the same class, same teacher (n=61). The quality of pedagogy was assessed using the instruments developed in the document; Quality Teaching in NSW public schools: A Classroom Practice Guide (New South Wales Department of Education & Training, 2003d). The item rating scales (ordinal scales scored on 1-5 Likert scale) allowed the researchers to make distinctions based on whether or not the quality in question is observed, how many students were engaged in that manner, and for how much of the lesson (Ladwig, 2005).

The second, qualitative, phase of research took place between April and June 2005 and after the researcher and teacher participants had discussed the first phase results, both individually and collectively. The research strategy of semi structured interviewing was undertaken to exhaustively pursue the key understandings of the participants on the central issues. It allowed them to express their opinions (Fontana, 2002; Olson, 2011) and provided an avenue for further discussion of their classroom teaching experiences with a sympathetic listener. Data collection involved undertaking one formal, individual, semi-structured interview of about 45 minutes with each of the participants recorded electronically. Data analysis involved an inductive process. The interviews were transcribed and a broad ‘open
coding’ approach based on Strauss and Corbin’s (1998) grounded theory and NVIVO software techniques described by Gibbs (2002) were used to identify themes.

Phase 1 classroom observation results - Unexceptional teaching

The individual teachers’ dimensional results are reported in Table 2 and the individual teachers’ results are reported in Table 3. In the interpretation of the results each of the dimensional construct scores (Table 2) needs to be considered relative to the mid-point (18). When coding using a 5 point observation scale, with ‘1’ being the minimum (absence of element) and ‘5’ being the maximum (sustained and frequently occurring element), the dimension scores range between a low of 6 and a high of 30, so the mid-point is 18, rather than 15, as would be expected with a 0-30 range.

Table 2: Dimensional scores - Individual teachers.

<table>
<thead>
<tr>
<th>Dimension/Teacher (N=61)</th>
<th>Ms Norris (N=9)</th>
<th>Mr Jones (N=10)</th>
<th>Mr Tyler (N=8)</th>
<th>Mr Brown (N=6)</th>
<th>Mr Dennis (N=8)</th>
<th>Mr Sutton (N=5)</th>
<th>Ms Smith (N=8)</th>
<th>Mr Wilson (N=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Cedar Ridge HS</td>
<td>Cedar Ridge HS</td>
<td>Mountain View HS</td>
<td>Mountain View HS</td>
<td>Blue Ridge HS</td>
<td>Blue Ridge HS</td>
<td>Cherry View HS</td>
<td>Red Ridge HS</td>
</tr>
<tr>
<td>Intellectual Quality</td>
<td>14.67 (2.27)</td>
<td>14.22 (2.949)</td>
<td>14.38 (2.624)</td>
<td>13.17 (2.137)</td>
<td>17.13 (1.642)</td>
<td>13.80 (1.643)</td>
<td>16.13 (2.532)</td>
<td>13.71 (0.951)</td>
</tr>
<tr>
<td>Quality Learning</td>
<td>16.02 (2.67)</td>
<td>14.67 (1.936)</td>
<td>16.10 (1.595)</td>
<td>17.00 (1.309)</td>
<td>14.67 (2.422)</td>
<td>17.88 (1.356)</td>
<td>18.60 (2.074)</td>
<td>14.00 (2.268)</td>
</tr>
<tr>
<td>Environment</td>
<td>16.31 (2.28)</td>
<td>16.10 (1.595)</td>
<td>17.00 (1.309)</td>
<td>14.67 (2.422)</td>
<td>17.88 (1.356)</td>
<td>18.60 (2.074)</td>
<td>14.00 (2.268)</td>
<td>14.71 (1.254)</td>
</tr>
</tbody>
</table>

Therefore, a dimension scoring below 18 was not very visible in the lessons coded; the appearance of its elements was uneven or only occurred once in a clear and unambiguous fashion. In the interpretation of the individual teacher results, the elements scores fall into one of four ranks. That is, ‘high-range’ (mean scores between 4 and 5: element frequent and sustained), ‘mid-range’ (mean scores between 3 and 4: element frequent but not necessarily sustained), ‘low mid-range’ (mean scores between 2 and 3: element visible) and ‘low range’ (mean scores between 1 and 2: element effectively absent).

Of the eight teachers observed, Mr Dennis achieved the highest individual mean score for Intellectual Quality (mean=17.13; std dev=1.642) with the highest scores for deep knowledge, deep understanding, and substantive communication. Mr Dennis also achieved the highest individual mean score for Quality Learning Environment (mean=19.00; std dev=2.00) with the highest scores for engagement, high expectations, students’ self regulation, knowledge integration and connectedness. The least successful teacher in promoting Intellectual Quality was Mr Brown (mean=13.17, std dev=2.137). However, Mr Brown scored the highest for student direction. The most successful teacher in creating Significance was Mr Sutton (mean=18.60, std dev=2.074). Mr Sutton had the highest scores for problematic knowledge, background knowledge, inclusivity and narrative.
Table 3: Element scores - Individual teachers.

<table>
<thead>
<tr>
<th>Elements/Teacher (N=61)</th>
<th>Ms Norris (N=9)</th>
<th>Mr Jones (N=10)</th>
<th>Mr Tyler (N=8)</th>
<th>Mr Brown (N=6)</th>
<th>Mr Dennis (N=8)</th>
<th>Mr Sutton (N=5)</th>
<th>Ms Smith (N=7)</th>
<th>Mr Wilson (N=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
<td>(Mean Std Dev)</td>
</tr>
<tr>
<td>Deep Knowledge</td>
<td>3.11</td>
<td>3.00</td>
<td>3.13</td>
<td>3.17</td>
<td>3.88*</td>
<td>3.20</td>
<td>3.38</td>
<td>3.00</td>
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<tr>
<td></td>
<td>0.333</td>
<td>0.471</td>
<td>0.354</td>
<td>0.408</td>
<td>0.354</td>
<td>0.837</td>
<td>0.744</td>
<td>0.000</td>
</tr>
<tr>
<td>Deep Understanding</td>
<td>2.78</td>
<td>2.60</td>
<td>2.63</td>
<td>2.33</td>
<td>3.38*</td>
<td>2.80</td>
<td>2.75</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>0.471</td>
<td>0.516</td>
<td>0.518</td>
<td>0.516</td>
<td>0.518</td>
<td>0.447</td>
<td>0.463</td>
<td>0.535</td>
</tr>
<tr>
<td>Problematic Knowledge</td>
<td>2.00</td>
<td>1.80</td>
<td>2.38</td>
<td>2.23</td>
<td>2.00</td>
<td>2.40*</td>
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<td>0.866</td>
<td>0.919</td>
<td>0.744</td>
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<td>0.926</td>
<td>0.548</td>
<td>0.707</td>
<td>0.535</td>
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<td>Higher-Order Thinking</td>
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<td>1.75</td>
<td>1.67</td>
<td>2.63</td>
<td>2.20</td>
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<td>0.707</td>
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<td>0.518</td>
<td>0.447</td>
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<td>Metalanguage</td>
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<td>2.25</td>
<td>2.00</td>
<td>2.38</td>
<td>1.00</td>
<td>2.50*</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>0.782</td>
<td>0.316</td>
<td>0.463</td>
<td>0.632</td>
<td>0.518</td>
<td>1.00</td>
<td>0.535</td>
<td>0.000</td>
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<tr>
<td>Substantive Communication</td>
<td>2.56</td>
<td>2.60</td>
<td>2.25</td>
<td>2.33</td>
<td>2.88*</td>
<td>2.2</td>
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<td>0.516</td>
<td>0.500</td>
<td>0.491</td>
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<td>Explicit Quality</td>
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<td>1.38</td>
<td>1.33</td>
<td>1.63</td>
<td>1.00</td>
<td>2.50*</td>
<td>1.71</td>
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<td>0.744</td>
<td>0.000</td>
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<td>Engagement</td>
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<td>2.88</td>
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<td>3.63*</td>
<td>3.20</td>
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<td>0.518</td>
<td>0.951</td>
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<td>High Expectations</td>
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<td>2.20</td>
<td>2.38</td>
<td>2.33</td>
<td>3.50*</td>
<td>2.20</td>
<td>3.00</td>
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</tr>
<tr>
<td></td>
<td>0.500</td>
<td>0.422</td>
<td>0.518</td>
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<td>0.516</td>
<td>0.447</td>
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<td>0.535</td>
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<tr>
<td>Social Support</td>
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<td>3.75</td>
<td>3.33</td>
<td>4.13</td>
<td>3.80</td>
<td>3.75</td>
<td>4.29*</td>
</tr>
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<td>0.568</td>
<td>0.707</td>
<td>0.516</td>
<td>0.744</td>
<td>0.447</td>
<td>0.463</td>
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<tr>
<td>Students’ Self-Regulation</td>
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<td>3.10</td>
<td>3.75</td>
<td>3.67</td>
<td>4.25*</td>
<td>4.00</td>
<td>3.63</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>0.500</td>
<td>0.568</td>
<td>0.463</td>
<td>0.816</td>
<td>0.463</td>
<td>0.000</td>
<td>0.518</td>
<td>0.577</td>
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<tr>
<td>Student Direction</td>
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<td>1.70</td>
<td>1.38</td>
<td>2.17*</td>
<td>1.88</td>
<td>1.80</td>
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</tr>
<tr>
<td></td>
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<td>0.744</td>
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<td>1.095</td>
<td>0.104</td>
<td>0.463</td>
<td>0.756</td>
</tr>
<tr>
<td>Background Knowledge</td>
<td>3.11</td>
<td>3.30</td>
<td>3.38</td>
<td>2.67</td>
<td>3.50</td>
<td>3.60*</td>
<td>2.75</td>
<td>3.14</td>
</tr>
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<td></td>
<td>0.928</td>
<td>0.483</td>
<td>0.518</td>
<td>0.816</td>
<td>0.535</td>
<td>0.548</td>
<td>0.463</td>
<td>0.690</td>
</tr>
<tr>
<td>Cultural Knowledge</td>
<td>3.33*</td>
<td>1.90</td>
<td>2.63</td>
<td>2.33</td>
<td>1.63</td>
<td>3.00</td>
<td>1.50</td>
<td>1.29</td>
</tr>
<tr>
<td></td>
<td>0.707</td>
<td>1.101</td>
<td>1.061</td>
<td>0.816</td>
<td>0.961</td>
<td>0.707</td>
<td>0.535</td>
<td>0.756</td>
</tr>
<tr>
<td>Knowledge Integration</td>
<td>1.89</td>
<td>1.70</td>
<td>2.13</td>
<td>1.17</td>
<td>2.25*</td>
<td>1.40</td>
<td>1.75</td>
<td>1.71</td>
</tr>
<tr>
<td></td>
<td>0.928</td>
<td>0.823</td>
<td>0.835</td>
<td>0.408</td>
<td>0.463</td>
<td>0.548</td>
<td>0.707</td>
<td>0.756</td>
</tr>
<tr>
<td>Inclusivity</td>
<td>4.22</td>
<td>4.10</td>
<td>4.00</td>
<td>4.67</td>
<td>4.38</td>
<td>4.80*</td>
<td>4.00</td>
<td>4.57</td>
</tr>
<tr>
<td></td>
<td>0.441</td>
<td>0.568</td>
<td>0.535</td>
<td>0.516</td>
<td>0.518</td>
<td>0.447</td>
<td>0.535</td>
<td>0.535</td>
</tr>
<tr>
<td>Connectedness</td>
<td>2.78</td>
<td>3.20</td>
<td>2.88</td>
<td>2.00</td>
<td>3.63*</td>
<td>3.20</td>
<td>2.25</td>
<td>2.43</td>
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<td></td>
<td>0.667</td>
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<td>0.354</td>
<td>0.894</td>
<td>0.744</td>
<td>1.304</td>
<td>0.886</td>
<td>0.787</td>
</tr>
<tr>
<td>Narrative</td>
<td>2.33*</td>
<td>1.90</td>
<td>2.00</td>
<td>1.83</td>
<td>2.50</td>
<td>2.60*</td>
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</tr>
<tr>
<td></td>
<td>0.866</td>
<td>0.568</td>
<td>0.756</td>
<td>0.753</td>
<td>0.535</td>
<td>0.894</td>
<td>0.707</td>
<td>0.535</td>
</tr>
</tbody>
</table>

(highest mean score*)

In developing a Quality Learning Environment the least successful teacher was Ms Norris (mean=13.22, std dev=1.563) with Ms Smith being the least successful in creating Significance (mean=14.00, std dev=2.271). However, Ms Smith scored more highly then the other teachers on higher-order thinking metalanguage, explicit quality criteria and engagement. Mr Brown scored the highest for student direction, with Ms Norris having the highest score for cultural knowledge. Mr Wilson scored highly on social support.

It was obvious that ‘successful’ teaching was a complicated matter and each teacher had different ways of approaching it. However overall, the findings seemed to indicate that these HSIE teacher participants appeared to be ‘teaching defensively’ (by analogy with ‘driving defensively’) or were ‘playing it safe’. The scores of all teachers were not high but were not low either. That is, the teachers seemed bound by their perceptions of external demands and were being very careful in their pedagogy, taking a controlling role in the
classroom interactions. Mr Brown scored lowest for Intellectual Quality, yet he promoted student direction. Mr Dennis scored quite highly compared to the other teachers but did quite poorly on cultural knowledge and student direction. Knowledge integration was not high and there was little explicit quality criteria evident in any of the teaching. As they considered the scores in light of their classroom observations, the researchers recognised an underlying fear of aiming too high on any one aspect of what could be perceived to be good teaching practice: the participating teachers seemed to draw back from following lines of activity that might have coded more highly, instead choosing to stick to the ‘middle of the road’ or ‘routine’ teaching. Did they think that such defensive teaching was safer? Their fears of underperformance seemed to impede teaching for excellence. To clarify our inferences the second phase of the study included collaborative interviews. Why did the participating teachers teach the way they did?

Phase two results: ‘Classroom Pedagogical Alignment’ - Participant’s perspective of an influence on classroom instruction

When the interview data was analysed, three of the teacher participants clearly indicated that external assessment and accountability concerns for student performance in public examinations had strongly influenced their instructional practices. These concerns are most pronounced in the following extracts:

I think there is a big concern with most teachers about whether or not they are jeopardising School Certificate and Higher School Certificate results if they pursue Quality Teaching and learning and letting go of the content. (Ms Smith)

I mean someone is saying, here is a good teaching and learning strategy, but on the other hand we have all these external assessments . . . It is sort of accountability of covering your backside and getting the content down. I think the focus on teaching and how students learn is gone. Quality Teaching is the first time, in a long time that anybody has really thought about it. (Mr Jones)

. . . but the Quality Teaching model was probably hobbled a bit anyway because of the very nature of new HSC and Year 7 to 10 syllabi requirements (introduced in 2003) implemented in the last 5 years . . . (Mr Brown)

There was a preoccupation in completing the mandated curriculum requirements, with an emphasis on coverage of content rather than in depth understanding. In most instances in faculty programs the instructional strategies were primarily designed to help teachers complete the mandated knowledge and skills and unlikely to promote Quality Teaching.

To address concerns about student performance in both internal school assessments and in externally administered School Certificate (SC) and Higher School Certificate (HSC) examinations aligning syllabus knowledge and skills and assessment with teaching was seen as a solution. In Ms Smith’s HSIE faculty, teacher designed worksheets were developed to deliver syllabus knowledge and skills (deep knowledge) consistently across all years. Marking rubrics containing standards for students to individually and collectively assess the quality of their work were developed and displayed in rooms (explicit quality criteria). By focusing on explicit quality criteria, students were seen to be able to develop a deep understanding of the subject knowledge and skills (deep knowledge) to enhance the Intellectual Quality of student’s work.
programs are aligned with the Quality Teaching framework and what is happening on a day-to-day basis in the classroom is also aligned with certain instructional tasks . . . some other things, we have also used, because the school is concerned about SC & HSC side of things we designed some rubric posters using the SC & HSC rubrics. (Ms Smith)

. . . We also put together some resource folders together so that teachers are teaching the curriculum much more consistently and what we are trying to do is much more explicit (deep knowledge) . . . not just for the students but also for the teachers, so there is much more consistency and the resource folders designed to align content and assessment. (Ms Smith)

Some felt that these approaches clearly constrained their practices:

. . . Yes and there are many constraints that teachers keep coming against . . . Think about a plan of getting rid of the School Certificate, or get rid of the HSC and if you feel about actually teaching and getting rid of subjects, don’t break us up into little blocks of time scattered over the fortnight, if you really want to do stuff. . . . Everything should be up for grabs, syllabi, exams and teachers’ workloads the whole lot if they really want to restructure. Now everything has become too assessment orientated. (Mr Jones)

The teachers expressed reluctance to take risks in the pursuit of Quality Teaching, as they believed they would jeopardise student results in the School Certificate and Higher School Certificate examinations. Similarly, Mr Jones recognised that ‘external assessments since 2000 had increased accountability for student performance that restricted peoples’ willingness to have a go and take risks with new teaching strategies’. Completing syllabus content was seen as central to address accountability concerns with instructional practices focused on standardised textbooks and in doing so controlling what was taught in classrooms. From these teachers’ accounts, there was a fear that low performances was unacceptable and this fear seemed to impede the use of teaching strategies that would encourage higher-order thinking and so make high level performances in externally administered exams unlikely.

From these findings, it would seem that these HSIE teachers were aligning curriculum, assessment and classroom instruction in their classrooms in response to meeting what they understood of externally mandated curriculum requirements and predetermined testing benchmarks in externally administered assessments including the NSW School Certificate and Higher School Certificates. The external syllabus documents provided teachers with room to move, but concern for the impact of external examinations on the prospects left open to their students, and on their own standing within school and region, seems to have discouraged these experienced teachers from taking advantage of it. This finding is consistent with the influence on teachers and teaching of ‘constructive alignment’ and ‘curriculum alignment’ with the teachers’ finely tuning instructional practices in the classroom context to meet perceived external accountability requirements. The researchers termed this process ‘Classroom Pedagogical Alignment’ or CPA arguing that it involves the purposeful alignment of subject content, instruction and assessment in classrooms in response to teacher perceptions of mandated curriculum requirements and testing benchmarks in externally administered assessment. It is strongly linked to conceptions such as ‘constructive alignment’ and ‘curriculum alignment’ but it is individually classroom based and so offers a new insight into how teachers implement alignment. Importantly, in understanding classroom
practice, CPA rests on teacher perceptions of external pressures rather than on the actual nature of those pressures.

‘Classroom Pedagogical Alignment’ and observed classroom practice: Mr Jones and Ms Smith

To better clarify the influence of CPA on the pedagogy of classroom practice the coding descriptors from *Quality teaching in NSW public schools: A classroom practice guide* (NSWDE&T, 2003d) and elements scores for Mr Jones and Ms Smith were linked. In examining the **Intellectual Quality** of their lessons, both teachers had mid-range means for **deep knowledge** (Ms Smith - mean = 3.38; Mr Jones - mean = 3.00). A mid-range mean for **deep knowledge** implies that the teachers focused on the key syllabi concepts with only occasional superficial or unrelated ideas. Low-range mean scores for **problematic knowledge** (Ms Smith-mean = 1.75; Mr Jones - mean = 1.80) indicate that the **deep knowledge** was transmitted static knowledge and only open to one interpretation. Further, **substantive communication** had low mid-range means (Ms Smith - mean = 2.63; Mr Jones – mean = 2.60) with classroom discussion following a typical ‘initiate-respond-evaluate’ or IRE pattern with low level recall. Although not a comprehensive indicator, the mid-range mean (mean = 3.13) for **higher order thinking** suggests that Ms Smith students were mainly performing lower order thinking with at least one significant higher order question during the lesson. On the other hand, for Mr Jones a low mid-range mean (mean = 2.10) meant that students were primarily involved in routine lower-order thinking with higher-order thinking as a minor diversion. In both classrooms **metalanguage** was not a priority with low mid-range scores (Ms Smith - mean = 2.50; Mr Jones - mean = 2.10). In these teachers’ lessons terminology was explained, however, neither the teacher nor the students stopped to make judgements or comments on the language. **Deep understanding** for both teachers had a low mid-range score (Ms Smith - mean = 2.75; Mr Jones - mean = 2.60) indicating an unevenness in understanding with students demonstrating both shallow and **deep understanding** at different points in the lessons. Further, as students’ **deep understanding** was shallow and uneven it could be argued these instructional practices were not overly effective. Overall, instructional activities routinely involved students in lower-order thinking, in the recalling of factual information and in defining subject specific terminology.

In promoting a **Quality Learning Environment**, given these HSIE teachers’ accountability concerns for student performance in school and public examinations, **explicit quality criteria** should have been prominent. However, in Mr Jones’ classroom, as with all the other HSIE teachers in the study, **explicit quality criteria** coded in the low-range (mean = 1.30) with only general statements provided by the HSIE teachers to the students regarding the desired quality of their work. Ms Smith’s classroom exhibited **explicit quality criteria** coded in low mid-range (mean = 2.50), the highest of all the teachers. However, there seemed to be some confusion by Ms Smith about the type of teaching required to support this Quality Teaching element as there was little or no evidence of students using the criteria demonstrated to examine the quality of their own work. Instead the explicit quality criteria appeared to be for the teacher’s benefit with implications for student ownership of their own achievement. The low range scores for **student direction** (Ms Smith – mean = 1.75; Mr Jones - mean = 1.70) supports this view with students having minimal control over the choice of activities, the time spent on activities, the pace of the lesson or the criteria by which the students’ work would be assessed. In Mr Jones’ classroom the relatively low mid-range mean (mean = 2.20) indicated that student **engagement** was sporadic with off-task behaviours that signalled boredom and a lack of effort. Alternatively, in Ms Smith’s classroom, a mid range mean (mean = 3.63) indicated that **engagement** was widespread with most students on-task
and trying hard most of the time. Both teachers scored in the mid-range for self-regulation (Ms Smith – mean = 3.63: Mr Jones - mean =3.10) with students demonstrating initiative in regulating their own behaviour. High expectations in Ms Smith’s classroom scored in the mid range (mean = 3.00) with many students participating in challenging work during at least half of the lesson, while the low-mid range score (mean = 2.20) suggests that only some students participated in challenging work in Mr Jones’ lessons. In Ms Smith’s and Mr Jones’ classroom building positive relationships between the students and the teacher was important with Social Support scoring in the mid-range (Ms Smith – mean = 3.75: Mr Jones - mean =3.90). Both teachers encouraged their students to take an interest in their work, and to contribute to group tasks and help other students. Overall with respect to Quality Learning Environment teacher-centred instruction was seen as better suited to complete the mandated History and Geography syllabi content and skills requirements. Importantly, with teacher-centred instruction usually involving routine tasks, some students may not have found the work very challenging (high expectations) with high levels of social support needed for students to regulate behaviour (self-regulation). Further, it could be argued teacher-centred instruction contributed to the variability in student engagement and the low levels of explicit quality criteria observed.

In creating Significance, a concern for student welfare was central with both teachers scoring in the high range for inclusivity (Ms Smith - mean = 4.00: Mr Jones - mean = 4.10). In their classrooms students from all cultural and socio-economic backgrounds were valued for their contribution to the work of the class. However, in both teachers’ classrooms, knowledge integration (Ms Smith - mean = 1.75: Mr Jones - mean = 1.70), cultural knowledge (Ms Smith - mean = 1.50: Mr Jones - mean = 1.90) and narrative (Ms Smith - mean = 1.75: Mr Jones - mean = 1.90) scored in the low-range. These scores indicate that the knowledge in lessons was mainly restricted to the HSIE subject topic area they were studying, that narratives were used on occasion as a minor part of the lesson; and that while some cultural knowledge was evident it was treated in a superficial manner. Students’ background knowledge for Ms Smith scored in the low mid-range (mean = 2.75) with Mr Jones scoring in the mid-range (mean = 3.30). In these classrooms background knowledge was mentioned or elicited briefly, was connected with the substance of the lesson and there was at least some connection to out-of-school knowledge. Further, in Mr Jones’ classrooms the mid-range score for connectedness (mean = 3.20) indicated that the students recognised some connection between classroom knowledge and the situations outside the classroom, but they do not explore the implications of these connections. In Ms Smith’s classroom the low mid-range score for connectedness (mean = 2.25) indicated that while the teacher or students were trying to connect what was being learned to the world beyond the classroom, but the connections were weak, superficial and trivial. Thus making meaningful connections between other topics or between other subjects/KLAs (knowledge integration) was a minor consideration with cultural knowledge treated in a superficial manner. With a focus on completing subject content knowledge and skills, exploring student background knowledge was common, although narratives were a minor part of lessons. In creating value beyond the classroom (connectedness) the work students were doing served only as a level of competence or compliance to meet formal schooling and subject content completion requirements.

Implications and concluding comments

Overall, in linking these Stage 4/5 HSIE teachers’ comments to the classroom observations there was evidence that CPA strongly influenced the instructional bench marks for Quality
Teaching. The notion of CPA involving the ‘linking’ or ‘tight coupling’ of education policy, curriculum and assessment to external examinations to promote efficiency in classrooms, perhaps unwittingly, focused these HSIE teachers’ instructional practices on risk-averse strategies to address accountability concerns. They became technicians of accountability. The findings from this research suggest that with increasing accountability from governments and society, teachers view themselves as being ineffective and are feeling and behaving as ‘deskilled technicians’ in classroom instruction.

Some of the neuroscience–based research provides insights of solutions to such a bleak picture (Clement & Lovat, 2012). For example, Immordino-Yang’s (2008) research indicates that educators need to consider varying learning pathways for learners that involve “explicit consideration of the perceptual, motoric, and socio-emotional aspects of the skill to be constructed” (p. 71). Further, building on Immordino-Yang’s work, Christoff (2008) argues that in education learning is all too often ‘solution oriented’ and there needs to be a greater emphasis placed on teaching that develops students skills to actively solve problems from different perspectives. Snow (2008) also notes that while there are many common or ‘easy way’ strategies to support learning, teachers need to be mindful of alternative lesson designs, based on learners own goals, to achieve similar outcomes. In terms of lesson design, there are numerous examples in the literature including, de Bono’s Six Thinking Hats (1985), Gardiner’s Multiple Intelligences (1993), Universal Design for Learning (Rose & Meyer, 2006) and Singer’s Integrated Structural model of math teaching (Singer, 2007). Thus students can be encouraged to achieve particular skills by different individual pathways. This is a much more complex teaching situation than a simple skills and knowledge attainment model (suggested by Classroom Pedagogical Alignment) to be assessed via set, predetermined outcomes and requires a professional teaching approach.

The primary objective of this study was to advance research in the field of classroom teaching and teacher change by gathering data to illuminate the quality of pedagogy in classrooms and the reasons for this classroom pedagogy. There is a need to determine exactly what the teacher does in the classroom in order to better understand just what kind of teaching we want to deem as high quality (Ladwig, 2005). This study provides direct evidence of what happens in classrooms and it is of concern that teachers feel the need to use classroom practices that are at the very least moderate in effectiveness and not strive for excellence because of accountability procedures. ‘Classroom Pedagogical Alignment’ is only of value if what is being aligned is quality pedagogy and represents a sophisticated understanding of 21st century learning.

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Evaluating the effectiveness of a fraction definition model to promote abilities of pre-service elementary teachers to solve fraction verbal problems

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Abstract: Despite its rising significance in mathematics curriculums and in the Common Core State Standards (CCSS) guidelines, fractions continue to be an area of difficulty for both teachers and students. This paper, consistent with other research within the Mathematics Knowledge for Teaching (MKT) framework, finds that much of this weakness may be due to teachers’ weak content knowledge. This weak content knowledge is shown to stem from the fraction curriculum’s emphasis on mastering rote solution algorithms, rather than conceptual understanding. I show here that presenting the fraction curriculum using an approach grounded in a referent—a precise mathematical definition of a fraction—can significantly improve pre-service teachers’ conceptual knowledge in working with fractions. The strength of the referent-based approach is statistically verified in a year over two semesters undergraduate-level classroom based case study. The results also suggest a particularly strong link between conceptual fluency and the ability to solve verbal word problems, a traditional area of difficulty.

Keywords: mathematics; curriculum; content knowledge; referent-based approach

Introduction

The major current in mathematics education today is to teach students to understand what they are learning and to be able to apply that knowledge (National Council of Teachers of Mathematics [NCTM], 2000; New Jersey State Department of Education Common Core Standards [CCSS], 2010). Although there are several factors that affect student achievement, researchers believe that teachers still play the most important role in helping students improve their mathematical understanding (Ball & Bass, 2000; Hill & Ball, 2008; Jill, Rowan, & Ball, 2005). Research has shown that subject area knowledge is the most essential aspect of teachers’ effectiveness in achieving this goal. Ball, Thames, and Phelps (2008) have shown that there may be nothing more foundational for teacher competency than how well the teachers know the subject themselves. This is supported by Ma (1999) who contends that elementary teachers must understand elementary mathematics at a “profound level” (p. X) in order to be able to understand and apply knowledge of appropriate pedagogy. The converse is also found to be true, as Wu (1999) shows that teachers who did not themselves problem solve would not be able to lead their students in a problem-solving environment. With particular regards to Mathematics teachers, Wu asserts that, “…what mathematics teachers do is teaching what they themselves had not a deeper understanding of”, which to Wu precludes, “the possibility of good teaching, since one cannot teach what one does not know” (p. 535). As a result, addressing the shortcomings of pre-service teacher’s content knowledge has become an issue of prime importance in education. If educators are to fully understand how teacher’s knowledge is related to curriculum implementation and to students learning, more critical analyses of teacher knowledge are needed.

The paper is structured as followed. Section one provides background on existing research into the main drivers behind effective teachers (the MKT framework), and in particular how it relates to the fraction curriculum and problem solving skills. Section two
provides a brief synopsis of the referent-based approach to the fraction curriculum. Section three presents the design of the case study to test the effectiveness of the referent-based approach. Section four presents the results and analysis, including illustrative samples of solutions given during the evaluative tests. Section five concludes the paper and highlights the main results.

Background

The mathematic knowledge needed by teachers is more than just skill; they need the kind of knowledge that enables them to provide students with explanation, to analyse students’ responses, and to use appropriate pictures to represent concepts. Without teachers understanding of mathematics this may not be realised (Ma, 1999; Wu, 1999). According to Ball, Hill and Bass (2005), the quality of mathematics teaching depends on teachers’ mathematical content knowledge, and alarmingly, many US teachers lack firm mathematical understanding and skill.

To teach mathematics effectively, it is necessary for teachers to be competent in a complex web of knowledge domains. The definition of the knowledge needed to teach mathematics has recently been the focus of researchers. Much of the current research focuses on what kind of knowledge is required to carry out useful analysis of teachers in the class. “Mathematical Knowledge for Teaching” (MKT) distinguishes between the necessary different types of knowledge for teacher effectiveness (Ball & Bass, 2000; Ball, Thames, & Phelps, 2008). The MKT framework distinguishes between subject matter knowledge and pedagogical content knowledge. Subject matter knowledge is subdivided into common content knowledge, specialised content knowledge, and knowledge on the mathematical horizon. Pedagogical content knowledge is subdivided into knowledge of content and students, knowledge of content and teaching and knowledge of curricula. The MKT framework provides an answer to what kind of content knowledge is needed to teach mathematics well. Recent work by Hill et al (2005, 2008) provides empirical support to the linkages between teachers’ mathematical knowledge and students’ achievement gains.

Consistent with these works, this study attempts to evaluate how alternative training methods for pre-service teachers can increase their effectiveness within the MKT framework. In particular, this paper attempts to quantify the impact of improving pre-service teachers common content knowledge (the first part of the MKT framework), and examines the underlying mechanics driving the results. This particular dimension of the MKT framework is important for several reasons. First, as discussed above, pre-service teachers content knowledge is known to be an area of particular weakness for new mathematics teachers, particularly in regards to fraction knowledge. Second, since content knowledge is independent of students and teaching ability, it is a good candidate for testing the effectiveness of program changes on teachers’ effectiveness in the MKT framework. Third, content knowledge understanding is something that can be learned in teacher preparation courses in a university setting, and can therefore provide an avenue for pre-service teacher programs to improve the effectiveness of their trainees.

In examining the link between content knowledge and teacher effectiveness, this study chooses to focus on verbal problem solving abilities within the mathematics fraction curriculum. The fractions content area is chosen for several reasons, including its importance to higher order mathematics, its increased prominence in the CCSS, and most of all the fact that it is a content area where elementary students traditionally have difficulty in achieving conceptual fluency. For these reasons, the fraction curriculum provides a good laboratory to
test the impact of new content teaching methods and is an area where new methods are most needed.

In addition, verbal problem solving was chosen to be the vehicle to evaluate changes in content knowledge mastery because such activities require using the highest order conceptual and quantitative reasoning ability. The NCTM (2000) have directly acknowledged the link between a student’s conceptual understanding and their ability to solve verbal problems in the Principles and Standards, writing:

Solving problems is not only a goal of learning mathematics but also a major means of doing so…. Problems solving is an integral part of all mathematics learning, and so it should not be an isolated part of the mathematics program. Problem solving in mathematics should involve all the five content areas described in this Standard… (p. 52)

More recently, the idea of problem solving as a key learning vehicle to develop the mathematical competencies, including reasoning abstractly and quantitatively and constructing viable arguments, has been infused into the Common Core Standards for Mathematical Practice (CCSSM, 2010).

A referent-based approach to fractions

As already discussed, the concept of a fraction is poorly understood and difficult to teach. Traditional instruction overemphases the application of rote procedures and has not been effective in imbuing teachers (and thus students) with a firm conceptual understanding of the fraction. Therefore an alternative approach that emphasises conceptual reasoning above simply algorithmic comprehension could yield big gains for students’ understanding. One such alternative is the referent-based approach to fractions, which relies on a three part mathematical definition of the fraction to frame all problems. The precise fraction definition provided is:

I. Something must be selected to represent the whole, and it is always given the value of ‘1’.
II. The whole is separated (partitioned) into a number of equal parts that is indicated by the denominator.
III. A certain number of those equal parts is selected for consideration and is always indicated by the numerator.

The focus of the referent-based method therefore relies on using the fraction definition to understand the exercises rather than using the exercises to understand the fraction. That is, students use the definition to develop a theoretical routine to solving problems, rather than a computational routine.

The definition can initially be presented with illustrative examples highlighting each of the three parts of the definition separately. For example, students will be presented with a shape like a rectangle and a fraction. First, they must identify the unitary whole as the rectangle, and then divide it into a number of equal parts reflected in the denominator. Finally, to express the fraction using the area model, they must shade a number of the equal sections as dictated by the numerator of the fraction. At each stage, the exercise is linked back to the definition of the fraction, helping to ground the conceptual routine in the mathematical definition of the fraction.
It is often helpful to present extra exercises particularly focused at building an understanding of each of the three parts of the fraction separately, before integrating them. For example, in practice I have found that students struggle with the idea of ‘equal parts’ when the shape becomes more complicated, or the partitions less obvious. In this case, presenting exercises requiring students to identify, across a range of geometric shapes, whether partitioning was done correctly and what the equal parts are can be very effective. An example of such an exercise is below, where questions such as (g) and (e) are particularly effective at stimulating classroom discussion of the key concepts. Students had to discuss the idea of equal area vs. congruent areas (see Figure 1).

![Figure 1](Equal vs Congruent areas (Adapted from Van deWalle, 2010))

Once students grasp the definition and its components, they can proceed through the regular curriculum applying the framework to each of the major fraction models: the area model, the linear model, and the discrete model. Once students display fluency with the new method, it is effective to present an abstract case to wrap up the main conceptual points, such as Figure 2.

![Figure 2](Abstract case example)

Using the above example, students were asked if the shape was partitioned correctly, and what fraction was being represented. The example is particularly interesting in that it requires students to apply all three parts of the fraction in analysing the example. They had to reason as to what is the whole (the Circle or Sectors) and whether there were equal parts represented before they could justify answers of ¼ or ½. The example is particularly effective in building intuition about the second dimension of the definition above, that is that every fraction must be understood with respect to an unambiguous whole where there must be a way to establish the area of each part.

The next sets of exercises were designed to help translate the introductory fraction concepts across a range of models. As an example of these activities, consider the following...
where students were required to represent each fraction with each of its three different modalities, drawing the correct picture representation and identifying how the figure’s components were interpreted using the fraction definition representing fractions in three models draw a picture of the fractions below (Figure 3) using each model.

<table>
<thead>
<tr>
<th>AREA</th>
<th>NUMBER LINE</th>
<th>SET</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3: Translating the introductory fraction concepts across a range of models

After students have proven fluency with the fraction definition across a range of models we transition to iteration using the unit fraction. Students were asked to build a whole out of a unit fraction. These exercises make for a natural starting point, as the unit fraction is the building block of fractions just as the number “1” is the building block of counting whole numbers. We also found it advantageous at this point to emphasise the unit fraction on a number line so students could view how we can obtain any fraction by combining a sufficient number of unit fractions. Consider the following preliminary example exercises (Figure 4):

1. If \( \frac{1}{4} \) represents \( \frac{1}{4} \), draw a picture of “1”
2. Represent \( \frac{1}{3} \) draw a picture of “1”
3. If \( \frac{2}{3} \), locate “1” on the number line.

Figure 4. Preliminary example

As a result of the fraction referent and its related exercises, students are able to internalise the fraction curriculum under one general framework, rather than linking their understanding to disparate computational procedures associates with each of the different models. See Alon (2012) for details on the structure of the referent-based approach, and how it can be applied to canonical problems in the fraction curriculum, as well as evidence of effectiveness in improving student test performance in this content area.

**Methodology**

In order to test the effectiveness of the referent-based approach in improving pre-service teachers’ content knowledge, and therefore its applicability to reach CCSSS goals, a qualitative and quantitative classroom-based experiment was conducted. Participants of the current study consisted of elementary education majors and the researcher. These students were enrolled in an undergraduate mathematics methods course designed to deepen their understanding of elementary school mathematics instruction. All the students had already completed two semesters of undergraduate level mathematics instruction coursework, where they have been exposed to the fraction curriculum using traditional teaching methods. Data
was collected over the course of the year during two separate one-semester mathematical methods courses.

To evaluate the program, a quantitative testing instrument is developed to evaluate the teachers’ pre-course and post-course understanding of fractions. Because the content knowledge is complex, the instrument was divided into three sections with each seeking to capture a different domain of mastery: fraction computational skill, fraction conceptual understanding, and solving fraction verbal word problems. The question content in all three sections did not exceed that typically covered in a K-8 classroom, and followed the standard curriculum for this type of course as encompassed in Van de Walle, Karp, and Bay-Williams (2010) *Elementary and Middle-School Mathematics: Teaching and Development (7th ed.)*. After instruction was completed, the pre- and post-course test scores were statistically analysed in aggregate, and across each subsection, to evaluate the effectiveness of the referent-based approach. Individual problems were also picked out to highlight how areas of particular difficulty for the participants were affected. An example of the verbal problems administered in the exams can be found in the appendix of this paper.

**Results and analysis**

Table 1 below summarises the pre- and post-course test performance in aggregate and for each subsection. The table confirms the widely observed outcomes discussed above, that while pre-service teachers maintain strong computational fluency with fractions, their word verbal problem solving skills and conceptual understanding are significantly weaker. Again drawing on the MKT framework, the teachers’ weaknesses in these content areas may well be primary reasons that students consistently test poorly in similar areas when learning fractions.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Computation</th>
<th>Conceptual</th>
<th>Verbal problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>45.8</td>
<td>66.7</td>
<td>47.9</td>
<td>22.9</td>
</tr>
<tr>
<td>Post-test</td>
<td>72.5</td>
<td>72.0</td>
<td>68.3</td>
<td>77.1</td>
</tr>
<tr>
<td><strong>Change</strong></td>
<td>58%**</td>
<td>8%</td>
<td>43%</td>
<td>238%</td>
</tr>
</tbody>
</table>

Note: Symbols*, ** indicating significance at the 1% and 5% significance level respectively.

By the end of the course, however, the participants showed substantial statistically significant improvement at the 1% level in post-course test performance. The biggest gains are to be found in verbal problem solving, followed by conceptual understanding of fractions. Participants’ computational ability improved less, from its already high base, with nearly all the change being driven by a few initially low outliers. These results would suggest that, as hypothesised, the theoretical-routines encouraged by the referent-based approach are indeed effective at improving pre-service teachers’ mastery of fraction content knowledge over traditional instruction motivated by fraction manipulatives and solution algorithms.

More interestingly, perhaps, is what seem to be a high level of interdependence between conceptual understanding (rather than computational fluency) and the ability to solve word problems. Indeed the correlation between participant improvements in the conceptual and verbal problem solving portions of the exam appears to be substantially higher than any linkage to computational fluency. These interdependencies can be interpreted again as evidence of two main themes already evident in the research. First, there seems to exist an over-reliance in the current instructional method relating to the fraction curriculum on procedural, rather than conceptual, content fluency. Part of the resulting high correlation...
can therefore be interpreted as a result of the referent-based instructional approach’s focus on applied conceptual thinking. The second theme evident is the primacy of verbal problem solving as both a goal and means of the mathematics curriculum. The fact that participants performed so well on computational exercises while lacking substantial conceptual understanding of the content highlights the need for placing more emphasis on verbal problem solving in the curriculum, as both the NCTM and the CCSS already point out.

These recurrent themes are further illustrated in examining many of the pre- and post-course verbal problem solving answers provided by participants. In many cases, participants were unable to answer even very simple word problems because they immediately jumped to rote procedures that were not at all relevant in the context of the problem. Consider the following examples:

Example 1

1. If $20.00 is 2/3 the price of a concert ticket, how much does the ticket cost?

\[
\frac{2}{3} = \frac{0.66}{x} \quad x = \frac{20 \times 0.66}{100}
\]

2. Rafael has read 4/7 of a book. He has read 108 pages. The book has how many pages?

\[
108 \times \frac{4}{7} = 61.14
\]

Example 2

4. Mike received some money for his birthday. He spent one-fourth of it on clothes. He spent five-sixths of what was left on CDs and half of what was left on school supplies. That left him with $2.00. How much did Mike get for his birthday, and how much did he spend on each item?

Note that in all the cases, students immediately set up the fraction multiplication algorithm, or an algebraic equation that tracked the semantics of the verbal problem. While the questions were relatively straightforward, students were unable (or unwilling) to engage the problem at the conceptual level and instead they overwhelmingly relied on trying to apply algebraic formulations to find the answer. When students relied instead on fraction models, they were typically only able to represent the fractions using various models, and not analytically use them to find the solutions using the models. In nearly all cases, if the problem did not fit directly into the model they were using they were unable to figure out what was wrong, or how to approach the problem from a different angle. Often even when students knew that the approach they were taking was inappropriate, they would continue through the rote procedure and indicate in the margins that they only were able to solve the problem using the one method they had mastered.
Example 3

In the pre test, it was not unusual to find comments similar to the following response of problem 5.

Example 4

In contrast, after being taught the material using the referent method, students changed their approach to the problem solving and were far more successful. In the post-test, students often applied the referent approach. Even when attempting to use algebra to reach an answer, they often verified that it was logical using the three-part definition in conjunction with one of the fraction models. Some students even completely forwent the use of algebra and solved the problem only using the referent-based approach with a fraction model.
Example 6

The examples provided above are largely representative of many of the pre- and post-test answers. By comparing them it is clear that current pedagogical methods bias students toward rote algebraic approaches, while leaving conceptual understanding underdeveloped. The referent-based approach, in contrast, seems to have sufficiently developed students’ conceptual understanding that they were to approach the problems using an array of tools, algebraic and abstract, leading to higher test scores and better understanding of the content.

Conclusions

While of rising significance in mathematics curriculums and in the CCSS guidelines, fractions continue to be an area of difficulty both for teachers and students. However, recent research into the drivers of effective learning has given us insight into what may be the reasons for these weaknesses. The MKT framework highlights the knowledge areas most crucial for effective learning, and corresponding research indicates that weak content knowledge (rather than pedagogical knowledge) seems to be a culprit behind weak points in the mathematics curriculum. Furthermore, the NCTM highlights how mastery of content knowledge is intimately tied to verbal problem-solving abilities.

In evaluating the performance of pre-service teachers, this paper confirms that many of them do indeed exhibit weaknesses in content knowledge areas consistent with those expected by the MKT framework and the NCTM. This study further suggests that these weaknesses are the fault of current reliance on rote procedures. An alternative referent-based method of instruction is presented that emphasizes the development of conceptual, rather than procedural, routines for problem solving. The implementation of said method is shown to have had a statistically significant impact on pre-service teachers’ evaluation scores, particularly in those traditionally weak areas of verbal problem-solving and conceptual understanding.

The results of this paper together with the larger research related to verbal problem solving and the MKT framework outlined above suggest an effective way forward to address weaknesses in the K-8 curriculum as it pertains to fraction content. Under such a framework, pivoting the fraction curriculum of pre-service teachers away from solution algorithms and more toward developing precise mathematical conceptualizations of the fraction could be an effective means of progress toward improving teaching effectiveness and achieving the CCSS goals. Currently, however, more research is needed into the extent to which this improved content area mastery passes through pre-service teachers to their future students, or whether such a referent-based approach is better deployed as a pedagogical tool at the K-8 classroom level.
References


Appendix: Verbal Fraction Problems in Evaluation Test

1. If $20.00 is $\frac{2}{3}$ the price of a concert ticket, how much does the ticket cost?

2. Rafael has read $\frac{4}{7}$ of a book. He has read 108 pages. The book has how many pages?

3. There are 960 students that attend Bosco School. Some students walk to school, some ride the bus, some ride their bike, and the rest come by car. Six times as many ride the bus than come by car. The number that walks to school is $\frac{1}{2}$ the number that ride the bus. Twice as many ride their bikes than those that come by car. How many students come to school by each form of transportation?

   Walk _____________

   Bus _____________

   Bike _____________

   Car _____________

4. Mike received some money for his birthday. He spent one-fourth of it on clothes. He spent five-sixths of what was left on CDs and half of what was left on school supplies. That left him with $2.00. How much did Mike get for his birthday, and how much did he spend on each item?

5. Rachel went shopping with her mother at a store that was going out of business. She found a great dress that has been discounted several times. The first time, the original price had been discounted one-third. Then it had been discounted one-third more (of the discounted price). Finally, the price had been reduced by one-fourth more. Rachel paid $36.00 for the dress and felt very pleased. What was the original price?
Current issues on parental involvement in schools: A multicultural perspective

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- April 15, 2016: Final articles to the guest editor
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Research in related literature has yielded the importance of family involvement and working effectively with parents and families in schools. Increased involvement of parents and families often is cited as one of the most important ways to improve student success. The traditional sense of parents’ role in education has been limited with what they do at home and what schools formally tell them to do in regular meetings in schools. With the impact of changes in society, this traditional role of the family has changed over the years. Schools do not consider families as a part of the external community like in the past. On the contrary, they create a collaborative working environment with families.

Research has also revealed the impact of parental involvement in students’ success and effectiveness of schools. As the quality of the relationship between the school and the family improves so does the student achievement and families feel pleased to see that they actually make a contribution to the education of their children. That’s why revealing the many facets of school-family interaction has become a significant issue for educational researchers. This special issue aims to focus on current issues on family involvement in schools, and aims to illuminate studies by educational researchers working in different cultures. The core objective of this issue is to provide the latest research based on first-hand experience, observation and knowledge of scholars and educators in the field in order to form a cross-cultural discussion for all those working with schools and families.

Topics to be discussed in this special issue include (but are not limited to) the following:
- The theoretical and organisational foundations of school family partnerships.
- Leadership/management issues on parental involvement.
- How schools are addressing the issue.
- Knowledge, skills and relationships for school managers to be effective educational leaders in parental/family issues.
- Policy analysis and critical analysis of school-family interactions in the field.
- Concepts and theoretical formulations to understand, analyze, and evaluate parental involvement issues in educational organisations.
- Equipping school leaders with practical and theoretical knowledge of parental involvement that might be used to foster leadership and enhance the issues in schools.
- How to support and advance issues of parental involvement and help create schools ability to respond to families.
- School policies and procedures.
Using videography to promote pedagogical content knowledge in a geography method’s course

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Abstract: This paper reports on a case study of six preservice teachers who studied a 9-week course of senior secondary Geography for their education studies. Participants were videotaped teaching a geographical skill to their peers, and were then interviewed using video stimulated recall. The interviews were transcribed and categorised according to Shulman’s (1987) knowledge base of teaching. The research sought to identify participants’ understanding of pedagogical content knowledge, while at the same time the video stimulated recall interviews gave participants the opportunity to reflect on their own teaching and observe their peers commenting on their teaching. This research suggests that the use of video stimulated recall helps promote an understanding of pedagogical content knowledge and therefore reduce the mismatch of geography pedagogical skills between university methods course and the pedagogies that place in geography classrooms.

Keywords: geography teaching; preservice teachers; video stimulated recall; pedagogical content knowledge; Australian Curriculum

Australian curriculum: Geography

Beginning in 2014, all states and territories in Australia will phase in geography as a core subject along with history, English, mathematics and science through the Australian Curriculum. Like history, there was a time when geography was a stand-alone subject in Australian schools; from the 1980s, however, it was incorporated into studies of society and environment (SOSE) in most Australian states and thus reduced to one strand. As a core subject geography will now be given greater importance in Australian schools than ever before (Australian Curriculum Assessment Reporting Authority, 2010).

Findings from Berry and Smith (2009) indicate that the current shortage of suitably qualified geography teachers in Australia is in part owing to the submergence of geography into the SOSE curriculum, which has resulted in a serious compromise in the quality of geography teaching in schools. The case study also contains the challenging finding that students are leaving school with limited geographic knowledge because the generalist teachers who are being assigned to teach geography may not be geographically literate, and because even specialist geography teachers may not be utilising the most effective teaching methods. These findings are supported by the research by Catling (2013) and Segall and Helfenbein (2008) who argue for more research in geography preservice teachers’ initial teacher education, especially in the area of discipline knowledge and pedagogical content knowledge. Against the backdrop of the Australian Curriculum, in which geography will be offered as a core subject in 2014, this study seeks to investigate how videography can be used to promote pedagogical skills that are unique to the discipline of geography in a geography methods course.
New directions in geography teaching

Preservice teacher education departments are now moving from teaching SOSE to teaching geography. In this way, initial teacher education should progressively develop the knowledge and understanding, skills, values and attitudes specific to geographical education. If geography teachers are expected to determine appropriate forms of representation of knowledge during the transformation process, they need an understanding of the structural organisation of the subject matter knowledge (Bruner, 1977). A consultative paper by the Australian Learning and Teaching Council (2010) concerning geography standards at university level identified threshold skills, knowledge and capabilities of a Bachelor degree graduate with a major in geography. These thresholds cover a range of domains, including knowing, thinking, investigating and problem solving, communicating, self-directing and collaborating.

Teacher education departments offer a number of pathways for those who want to teach geography in secondary schools. For example, at the university in which this study was conducted, students must have first studied at least six geography subjects before they can undertake two geography curriculum/ methods courses in the Bachelor of Education program. Students must also complete a capstone course in their final year. Those students who enter the one-year, full time Graduate Diploma of Education are also expected to have completed the requisite number of discipline based geography courses. Up until this point of embarking on the geography curriculum courses, students have knowledge base of the discipline as only “subject matter knowers” (Berliner, 1986). The curriculum course, on the other hand, is designed to provide prospective teachers with the knowledge and skills to become “subject matter teachers”.

In addition to providing the opportunities for geography preservice teachers to explore the pedagogical skills of teaching geography, the curriculum course also gives the geography lecturer the opportunity to model effective geography teaching, to instil the passion for, and professional commitment to, geography teaching and the love of learning geography.

Scaffolding good teaching practice

In his study in schools of professional education at universities, Shulman (2005) identified three components of signature pedagogies: ‘surface structure’ which is the operational acts of teaching; ‘deep structure’, the understandings of how to best deliver knowledge; and ‘implicit structure’, the moral dimension of the profession.

Routine is a defining attribute of signature pedagogies in that it allows both students and teachers to focus on complex subject matter. Another feature of signature pedagogies is the emphasis on student performance thereby reducing what Shulman (2005, p.57) calls their “passivity, invisibility, anonymity, and the lack of accountability”. The process of developing signature pedagogies needs to be conducted in an atmosphere of uncertainty, which in turn produces both excitement and creative tension – key elements in intellectual development. Finally, signature pedagogies “prefigure the cultures of professional work and provide the early socialisation into the practices and values of a field” (Shulman, 2005, p.59). In short, how tertiary educators teach at university will shape how professionals craft their best practice.
At the school level, effective teachers should engage their students in ways that create a real need to know and a desire to become active learners (Loughran, 2010). This idea of creativity is the central thrust of research by Turner-Bisset (2005) who argues that the creative teacher is one who regularly selects, combines, rearranges, and synthesises already existing knowledge and skills so as to renew oneself in a professional and personal sense, as well as fostering children’s own creative abilities.

Studies of teachers’ pedagogical content knowledge base indicate that although core understandings are shared or held in common, it largely consists of a personal construct system unique to each teacher. Chen and Ennis (1995) also found in a study on high school physical education teachers that although they shared common subject matter knowledge they differed in their pedagogical content knowledge.

Nevertheless, the process of developing pedagogical content knowledge, as Stimpson (2005) notes, is a challenging one for beginning teachers as they try to accommodate the varying theories relating to pedagogy and classroom practice. Beginning teachers tend to make incorrect judgements about students’ misconceptions and to view teaching as telling rather than representing content for better student understanding (Hogan, Rabinowitz & Craven, 2003) and learning as listening rather than actively processing and structuring content. The results of longitudinal, qualitative study by Reitano (2004) of 10 beginning Social Science teachers as they moved from their final six months of preservice teaching to their first six months of in-service teaching, indicated that pedagogical content knowledge does not develop as a consistent element of teachers’ repertoires until they are engaged in independent practice at school. Indeed, research by Rynne and Lambert (1997) show that there will be a degree of mismatch between students’ undergraduate experiences and the teaching demands of geography in schools. How this mismatch can be minimised is the subject of this paper. Hence, the research question:

To what extent can growth in preservice teachers’ pedagogical content knowledge be optimised in a geography methods course?

Design and methodology

This qualitative study used case method and design in the investigation of preservice teachers’ conceptions of effective geography teaching in a methods course. The study used Shulman’s (1987) knowledge base of teaching as the theoretical framework to categorise participants’ knowledge growth, especially pedagogical content knowledge. Video stimulated recall (VSR) is used to capture the participants’ thoughts in the methods course: this tool allows the participants to confront their own actions and make explicit their implicit beliefs to understand the ‘how’ and ‘why’ of their actions.

As explained earlier, pedagogical content knowledge is a specific focus of the study, is unique to teachers, and is argued to separate, for example, a social science teacher from a social scientist. “Teachers differ from biologists, historians, writers, or educational researchers, not necessarily in the quality or quantity of their subject matter knowledge, but in how that knowledge is organised and used” (Cochran, King, & De Ruiter, 1993, p266). Pedagogical content knowledge is seen as the special set of attributes that help someone represent his/her knowledge of subject matter in order to teach others. This paper reports on the results of six students who demonstrated an understanding of pedagogical content
knowledge from their reflections during the VSR interviews in a study conducted during a geography methods course.

**Context of study**

The study was conducted in two teacher education programs (Bachelor of Education (Secondary) and Graduate Diploma in Education (Secondary) at Griffith University in Queensland, Australia. The Bachelor of Education program is run over three-and-a-half years (with one summer and one winter semester intensives). During the first two years of the Bachelor of Education program, students undertake geography discipline courses and in their third year they participate in two geography curriculum courses (junior secondary geography curriculum and senior phase geography curriculum). The Graduate Diploma is a one year program in which students study only the two geography curriculum courses (in addition to teacher education and professional experience courses).

The study reported in this paper was implemented during the senior geography curriculum course, which is run in the second semester. By the start of second semester, third year, the Bachelor of Education students have undertaken a four-week practicum. The Graduate Diploma students are in their second of two semesters and have undertaken a six-week practicum in their first semester. The methods course runs for nine weeks, during which time students have 24 hours face-to-face contact, as well as online contact through the university’s electronic Blackboard site.

**Participants**

Letters of invitation to participate in the study were distributed to preservice teachers in their first tutorial of the Semester 2. Ethical issues were addressed. Six preservice teachers volunteered and during preliminary discussions, formally agreed to participate in the research project by individually signing a consent form. Participants could withdraw at any stage, and all were given anonymity. This paper reports on the six students who identified pedagogical content knowledge in their VSR interviews. Participants were given the following pseudonyms: Mary, Hanna, Hamish, Brian, Anne, and Peter.

**Videotaping classroom events**

There is a general agreement among researchers and teacher educators that video can be a valuable tool for supporting teacher learning (e.g. Brophy, 2004; Darling-Hammond, 2006). Video captures the complexity of classroom teaching as it occurs in real time, with a richness and immediacy that written transcripts cannot achieve (Brophy 2004). The researchers in this study arranged with participants to be videotape during micro-teaching activities in which they taught their peers. The length of lessons ranged from 20-25 minutes. A digital camcorder was positioned on a tripod, and on most occasions, located at the rear of the classroom so the geography preservice teacher could be captured moving between the interactive whiteboard (at the front of the classroom) and the whiteboard at the side of the classroom.

The use of the video allows one to reflect on classroom events (Reitano & Sim, 2010; Santagata & Guarino, 2011). VSR, that is, revisiting and commenting on events in the classroom, has been shown to be an effective tool to make explicit the beliefs and implicit theories of teachers. Meijer, Beijaard and Verloop (2002) noted that teachers’ interactive cognitions were characterised by (a) split second thoughts; (b) tied to the specific context
(that is, the lesson); (c) closely connected to teachers’ knowledge and beliefs; (d) closely connected to classroom practice; and (e) integrative in nature. Reflection, then, can be explained as a “meaning-making process that moves the learner from one experience into the next with deeper understanding” (Rodgers, 2002, p.845). It needs to happen in interaction with colleagues, and it requires an attitude that values “the personal and intellectual growth of oneself and of others” (Rodgers, 2002, p.845). Shulman (1987, p.15) explains reflection as “reviewing, reconstructing, re-enacting and critically analysing one’s own and class’s performance, and grounding explanation in evidence”. There is generally agreement that reflective practices lead to professional growth (Reitano & Sim, 2010; Van Manen, 1977; Wildman, Magiaro, Niles, & McLaughlin, 1990). Zeichner and Liston (1987) emphasised reflection as a means of allowing teachers to take responsibility for their own growth.

Wear and Harris (1994, p.50) argued that if teachers were to reflect on and learn from their experiences in the classroom, they must have a clear picture of what actually happened. Their study showed that the VSR technique provided preservice teachers with the opportunity to engage in reflection by recalling significant aspects of their teaching experience that they may have forgotten. The results of their study justified the use of VSR as a way of providing clear insights into the performance of preservice teachers.

**Video stimulated recall interviews**

The researcher arranged with participants to be videotape them teaching a geographical skill for 20-25 minutes. The interviews were unstructured, using Nespor’s (1985, p.204) technique, “… I’d like you to stop the tape when you see yourself making a decision and tell me what you were thinking at that point”. If a pause between the recall of interactive cognitions proceeded longer than expected, however, the researcher used a prompt such as, “Would you like to comment on that?” On other occasions, participants would reflect on their actions whilst the videotape was still rolling, in which case, the researcher suggested that the participant would like to record his/her comments on the audiotape. At the conclusion of each recall session, the participant and the researcher would engage in a discussion about his/her classroom teaching, and the stimulated recall interview – a form of debriefing and feedback on the experience of the participant. The interviews were then transcribed and categorised.

**Analysis of video stimulated recall**

A number of ways have been used to analyse the data of VSR, for example, whether the categories are predetermined or derived empirically from the data. For example, Meijer, Beijaard, and Verloop (2002) used predetermined categories in their study of pedagogical content knowledge of twenty language teachers; Cunliffe (1994) used predetermined categories in her study, linking personal theory and reflection on practice; and Meade and McMeniman (1991) used Shulman’s (1987) knowledge base of teaching categories to explore the knowledge bases of an expert teacher. Marland (1977) developed categories from the collected data. This study used Shulman’s (1987) knowledge base of teaching categories to explore the knowledge bases, especially pedagogical content knowledge, of the preservice geography teacher. A pedagogical content knowledge base was assigned when the commentary satisfied Shulman’s (1987, p.15) general definition of reworking content knowledge that was pedagogically “... and yet adaptive to the variations in ability and backgrounds presented by students”. Shulman identified analogies, metaphors, examples, demonstrations and explanations as examples of the representational repertoire a teacher should possess in order for learning to occur. Participants in this study used a range of key words and phrases to describe how they sought to transform their knowledge for student
understanding: “So with my little anecdote there …” (Hanna); “I'm just giving them visual representation …” (Mary); “bring it back to the students' sense of place in the world …” (Hamish); “So trying to identify patterns…” (Brian); “So I could have just told them about the trends, but instead …” (Anne); “identify that relationship...” (Peter).

Results

The VSR interviews ranged from Peter’s 41 minutes to Hamish and Mary’s 13 minutes (Table 1). Peter’s interview was indeed the longest in duration of all interviews, and his interview also contained the most number of responses. His individual responses were generally longer in duration than the other participants, were more complex in his understanding of his knowledge in action, and generally he indicated greater insight into his own teaching than the other participants based on his understanding of content and pedagogy. Apart from ‘knowledge of educational contexts’, participants’ addressed the other knowledge bases at least once. This was a classroom activity where participants were expected to only focus on teaching geographical skills, so it is not surprising that only one student (Mary), addressed ‘knowledge of curriculum’. All participants addressed general pedagogical skills, indicating that they were at least mindful that the purpose of the activity was to teach a geographical skill to their peers and that some form of pedagogy was required.

Table 1: Participants’ knowledge bases adapted from Shulman’s (1987) knowledge base of teaching

<table>
<thead>
<tr>
<th>Participant</th>
<th>Number of responses</th>
<th>Time taken in min.</th>
<th>Pedagogical content knowledge</th>
<th>Knowledge of Content</th>
<th>Knowledge of Curriculum</th>
<th>Knowledge of learners</th>
<th>Knowledge of goals</th>
<th>General pedagogical knowledge</th>
<th>Knowledge of educational contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary</td>
<td>9</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Hanna</td>
<td>11</td>
<td>17</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Hamish</td>
<td>24</td>
<td>13</td>
<td>13</td>
<td>5</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Brian</td>
<td>21</td>
<td>17</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Anne</td>
<td>8</td>
<td>15</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Peter</td>
<td>33</td>
<td>41</td>
<td>15</td>
<td>7</td>
<td>4</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
</table>

As noted above, Peter’s total response time was longer than any other participant, and his individual commentaries were also longer in duration than any other participant. Indeed, each of Peter’s 33 commentaries was unique, that is, no two commentaries were the same. His commentaries ranged from observations about the props in the classroom, the available resources, to his classroom pedagogies. As seen in Table 1, Peter’s knowledge base for teaching had pedagogical content knowledge as his focus, followed by general pedagogical knowledge, knowledge of goals, knowledge of content and knowledge of learners.

Peter demonstrated a clear understanding of how he wanted to teach contour lines to the class. Kriewaldt and Digby (2010, p.45) note that “recognising a range of physical features from patterns made by contour lines takes practice”. It also requires the appropriate pedagogical content knowledge for students to recognise patterns in a range of physical features. Peter’s initial reflections indicate his desire for students to recognise patterns made by contour lines by making sure:

... that I gave a steep side and a flatter side to try and show and identify that relationship and I wanted to sort of gradually lead into it. I made sure to remind, to
begin with that it was from the top, because the lesson was about getting that side view the way we see everything.

Peter used explanation and the whiteboard to illustrate the relationships established by using contour lines. In a later commentary Peter explained his tactic of getting students to have input by being a provocateur:

Here, I'm doing something I always think of when I think of teaching. I like the idea of - I almost call it sabotage - I like the idea of trying to create problems that need to be solved to draw the students in. I like things being problematic. I like to offer a problem like what's the spot height? We don't have it. How can we do it? So that I can get them thinking and engaged. Andrew was great bait, went straight into it and said, oh, you know, you have to go up to the peak there, so I know they're still involved at least because it feels like I've been talking for some time now. I like to do that, to sort of, I guess, play a bit possum, sort of be a bit silly teacher up the front sometimes. Like, I don't know how to do this, you know, and see if I can get the clever student to explain how it needs to be done or at least if the problem is very complex, get them in groups so they can all put their heads together to try and solve it. I like the idea of problem-based learning, I guess.

Clearly, Peter did not see himself as the silly teacher, but by having students contribute to a problem-solving activity, he is establishing strong foundations for student inquiry. Geographical inquiry underpins each focus and elective units in the Queensland Senior Geography Syllabus (QSA, 2007) and in the Australian Curriculum: Geography where its intent is stated as “a structured way exploring, analysing and understanding”.

A number of interesting points emerge from the following commentary. First, Peter is passionate about Geography and wants to make geography exciting because he understands geography can slip into the boring category. Second, he wants to make the contour activity relevant to the real world. Hikers do get lost, some get injured and some die as a result of climbing mountains. So Peter uses a scenario of an injured hiker to illustrate slope:

So that's why here I want to start to offer the scenario, look for something that's interesting or humorous because I know laughter - I like things to be light, sometimes they get too heavy and that's when your content starts to be very dry and very boring. I feel sometimes it gets boring so I started to offer them the notion that they were out hunting for Sasquatch, to get them interested and maybe get the straggler at the back tuning in again. Once again . . . to understand why a landform has a slope. I know it doesn't seem that important or it doesn't seem that useful but, once again, that problem-based learning. Once I pose the problem to them, that they have somebody injured and they had to get them to safety, based with this knowledge now, they could make a more informed decision, a wiser decision, as to think about a way to go about overcoming the problem. So sort of offering them one example of a useful reason for possessing this knowledge and why they should be listening in and sort of trying to understand this.

Hamish also drew on his pedagogical content knowledge to promote students’ understanding of contour lines in topographic mapping. One of the benefits of not going first in an activity like this is that one can observe the pedagogical practices of those going beforehand. He noted that the previous student used ICT as a way of capturing students’ attention, so he used the whiteboard as a focal point to draw a series of contour lines to
explain some basic concepts such as contour patterns and contour value. Hamish also used questioning as a way of scaffolding students’ learning:

...so in this point, basically, with my questioning, I was trying to entice out of the students what their prior knowledge was on the subject. Also, just so everyone knew what I was talking about before I could progress on to it. I asked what I thought was a reasonably simple, possibly closed, question to which I got a relatively simple answer and I wanted them to elaborate further on that. I also chose to rephrase my question a little bit or ask the students so they can just kind of keep developing their concept and then came back to the cross-section.

Hamish used an analogy of his underwater diving experience as a way of encouraging students to recognise physical features from contour lines. He said that,

...what most people tend to do when they're on the surface of water, they look down. It really is quite strange how people are just so unaccustomed to having to look up or having to look at the world through a different perspective. I just thought I'd reiterate this point that, obviously, maps are from a top-down perspective and to kind of interpret that knowledge really takes a bit of practice and skill.

In order to promote students’ skills of interpretation and geographical knowledge, Hamish, “deliberately in the beginning, left out the river so we could just see what it was and then, hopefully, by drawing the river on, we could begin to think about the formations that caused it to turn into the formation”.

Mary, Hannah, Brian and Anne delivered lessons population pyramids, graphs, and climate graphs. Their reflections indicated a greater focus on knowledge of learners (Brian and Anne), and general pedagogical knowledge (Mary, Hannah, Brian and Anne) than on pedagogical content knowledge (see Table 1).

Discussion

This paper reports on the pedagogical content knowledge understandings of six preservice geography teachers. The focus of the analysis and discussion, however, was on Peter and Hamish because their understanding of this knowledge base was most prominent out of the six participants. It was clear that Peter and Hamish possessed a “...particular amalgam of pedagogy and content” (Gundmundsdottir, 1987, p.4). Peter sought to establish relationships between contour lines and the physical features of a topographic map. He used explanation to challenge, to play what Hartwig (2010) calls ‘the devil’s advocacy’, that is, a strategic decision-making activity to draw students into a problem-solving scenario involving an injured hiker in the rugged physical features of a mountain range. The premise for this activity is that conflict is positive for problem-solving. Hamish, on the other hand, used a range of questioning techniques that begun with the simple to the complex to set expectations for classroom discussions (Rubie-Davies, 2007). He used analogies to help students develop the skill of interpretation of contour lines, in this case to identify physical features in a cross-section. Both Peter and Hamish transformed their content knowledge into “the minds...of learners” (Shulman, 1987, p.16) through a process of representation, selection, adaptation and tailoring to meet the needs of their peers. Shulman (1987, p.16) states that these forms of transformations “...are the essence in the act of pedagogical reasoning, of teaching as thinking, and of planning – whether explicitly or implicitly – the performance of teaching”. Buchmann (1984) spoke of transformation as a “flexible understanding” where good teachers
maintain a fluid control of their subject matter, including their ability to view concepts from a variety ways, depending on the needs and abilities of learners. Whilst Mary, Hannah, Brian, and Anne demonstrated instances of pedagogical content knowledge in their reflections, their focus was mainly on Shulman’s other knowledge bases.

Conclusion

Teacher education involves primarily preparing aspiring teachers for rigours of the classroom, which typically includes studies of curriculum, content, and professional practice. Tertiary educators in initial teacher education programs should model good teaching practices, including pedagogical content knowledge. As our study shows, not all students immediately grasp pedagogical content knowledge during their methods courses. Tertiary educators, therefore, must explicitly address this critical element of effective teaching in all geography methods courses (Harte & Reitano, In Press). At a subtle and equally important level, education programs should also be about developing “a reliable inner disposition…which is about doing habits of the mind, habits of the heart and habits of actions” (Berkowitz, 1999, p.2). In other words, teacher education, and in this case, using VSR to promote reflective practices in methods courses, could be used as a precursor for instilling these habits of the mind, heart and actions in early career teachers. Habits of the mind is about knowing and understanding the importance of the “social situatedness” of teachers’ work (Clark & Hollingworth, 2002, p.955) and taking action in the form of productive professional development strategies that consider the individual teacher’s specific professional world of practice. Effective professional learning for teachers cannot be about either changing knowledge or changing teacher practices. These are inextricably linked as noted by Clark and Hollingworth (2002) who refer to an “interconnected model” of professional growth. A methods course that contains this model of learning would no doubt establish in the minds of early career geography teachers the value of using VSR in this approach to learning.

Acknowledgments

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References


Transforming pedagogy through philosophical inquiry

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**Abstract:** This study explored the impact of implementing Philosophy, in the tradition of 'Philosophy for Children', on pedagogy. It employed an experimental design that included 59 primary teachers. The experimental group received an intervention of training in Philosophy and the comparison group received training in Thinking Tools (graphic organisers), a subset of the Philosophy training. Lessons were coded on variables of pedagogy, across the two groups, at three time-points. Teacher interviews were conducted to gather participants' perspectives. Between group analysis of variance on several measures of pedagogy revealed that Philosophy significantly broadened teachers' pedagogical repertoire.

**Keywords:** community of philosophical inquiry; philosophy; transformative practice; pedagogy

**Introduction**

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) report (2007), *Philosophy – A School of Freedom*, points to the need for including Philosophy in the school curriculum as a way of fostering "children's capacities to think for themselves, to reason logically and to demand intellectual rigour" (p. 18). The report endorses teaching Philosophy as it (1) promotes the development of critical reasoning and the exercise of freedom, (2) involves "putting concepts and ideas into perspective" through reflection, and (3) develops "each person's skills to question, compare [and] conceptualise" which are requisite for "an open, inclusive and pluralistic, knowledge-oriented society" (p. ix).

Collaborative philosophical inquiry, following Lipman, Sharp and Oscanyan (1980), has been adapted in schools globally and studies have indicated an improvement in students' cognitive (Camhy & Iberer, 1988; Garcia-Moriyon, Rebollo & Colom, 2005; Millett & Tapper, 2012; Morehouse & Williams, 1998; Niklasson, Ohlsson & Rinborg, 1996; Topping & Trickey, 2007a, 2007b; Trickey & Topping, 2004), affective and social skills (Camhy & Iberer, 1988; Gardner, 1999; Millett & Tapper, 2012; Sasseville, 1994; Trickey & Topping, 2006).

While no substantial theoretical or practical differences distinguish Lipman's original programme from the way it has been typically adapted in Australia, in this paper the term 'Philosophy' (upper case 'P') will refer to the facilitation of the community of philosophical inquiry (also called ‘collaborative philosophical inquiry’ [CPI]) influenced by Lipman's educational theory and practice, such as the approach used in this study. The term 'philosophy' (lower case 'p') will denote the discipline itself. 'Philosophy for Children' will refer to Lipman's original programme. In particular, the community of philosophical inquiry is explained as a pedagogical approach to teaching CPI.

Lipman's 'Philosophy for Children' program and the pedagogical construct of the community of inquiry are built upon social, constructivist learning theories (Dewey, 1933; Vygotsky, 1978) and emphasise the learning process and the learner's personal involvement in learning. A community of philosophical inquiry is generally constructed with students and their teacher seated in a circle, engaged in Collaborative Philosophical Inquiry (CPI) about the students’ philosophical questions. Within the CPI students are encouraged to engage in
critical, creative, caring (Lipman, 2003) thinking to be able to question, hypothesise, analyse, test, evaluate, synthesise and generalise information to everyday experience.

For Dewey (1944) these forms of thinking were made useful through reflective thinking. Reflective thinking is for Dewey (and Lipman) the thinking process, which generates the reconstruction of experience and for Dewey (1944) "education [is] a constant reorganising or reconstructing of experience" (p. 76). Hence, through the critical, creative and caring thinking, which is enabled through engagement in CPI, both students and teachers are able to transform their current understandings and learn. This learning has been documented in terms of student outcomes (mentioned earlier) and it is posited in this study that there are transformational learning outcomes for teachers who engage in CPI with their students.

Prior research about the impact of teaching Philosophy has focused on student outcomes. This study employs a large sample of comparative observations of pedagogy, and teacher self-report data, building on previous research and addressing the need for more rigorous research (Reznitskaya, 2005).

Exploring the impact of Philosophy on pedagogy

Several small qualitative studies have investigated the impact of CPI on pedagogy (Daniel, 1998; Mergler, Curtis & Spooner-Lane, 2009; Roberts, 2006; Roche, 2000, 2011; Yeazell, 1981) indicating the importance of and need for a larger empirical study. Yeazell (1981) investigated the impact of CPI on pedagogical practice with a group of seven teachers. She implemented pre and post-testing of critical thinking via the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1964) and of self-actualisation (Maslow, 1962) via the Personal Orientation Inventory (Shostrom, 1966). 'Harry Stottlemier's Discovery' (Lipman, 1971) was the stimulus used for CPI for two lessons a week over seven-months. Findings were positive on self-actualising measures, with no significant changes on teachers' critical thinking.

In a different study Daniel's (1998) worked with four preservice Physical Education teachers for nine discussion sessions identifying "pedagogical problems in a community of philosophical inquiry mode" (p. 16). Daniel claims that significant progress was made by the teachers in terms of: (1) the questions being less technical, (2) the mode of communication being more dialectical, and (3) some participants using higher-order thinking.

Daniel's second research project involved 13 preservice Physical Education teachers in weekly discussions over a 15-week period. Short philosophical/pedagogical stories written by the researcher were used to stimulate philosophical inquiry about the hidden curriculum in Physical Education. Video transcriptions and participants' written reflections were analysed and revealed that engaging in philosophical inquiry lead to positive outcomes, including: "1) a widening and deepening of their teaching knowledge; 2) development of their thinking skills; 3) a personal and critical re-appropriation of their teaching experience; [and] 4) the development of self-esteem" (p. 16). Participants’ comments affirmed these outcomes.

Roche (2000) analysed transcripts of Philosophy lessons with her class and claimed an improvement in her pedagogy. Her subsequent PhD study (2011), affirmed these initial reflections through continued reflection on the impact of dialogical pedagogies learnt through facilitating philosophical inquiry.

Roberts (2006) concluded that teachers who teach Philosophy observed positive changes professionally and personally, and in their students. Roberts recommended on-going support to deepen teachers' understandings of the metacognitive processes involved in teaching Philosophy.
Mergler et al (2009) reflected on the impact of 12-weeks of teacher educator training in Philosophy. They concluded that Philosophy encouraged deep thinking, increased self-awareness, attentive listening, the opportunity and ability to consider differing viewpoints and the ability to articulate ideas with supporting reasons.

This prior research demonstrates positive effects of CPI for students (Garcia-Moriyon, Rebollo & Colom, 2005; Millett & Tapper, 2012; Topping & Trickey, 2007a, 2007b; Trickey & Topping, 2004, 2006) and teachers (Daniel, 1998; Mergler, Curtis & Spooner-Lane, 2009; Roberts, 2006; Roche, 2000, 2011; Yeazell, 1981). Further efforts are however required, to employ rigorous, empirical methods, which can build on existing studies to document and detail the impact of engaging in CPI on the teacher’s pedagogy.

**Purpose of the study**

The research question framing this study was, “What impact does training in and implementation of Collaborative Philosophical Inquiry have on pedagogy, in the pedagogical dimension of Intellectual Quality? This study employed an experimental design to evaluate the impact of CPI on pedagogy. The experimental group received an intervention of training in Philosophy and the comparison group received training in Thinking Tools (Cam, 2006) (graphic organisers), a subset of the CPI training. The two groups were labelled the Philosophy Group and Thinking Tools Group, respectively. The independent variables were the intervention and time (pre-intervention, 3-months post-intervention and 7-month follow-up). The dependent variable was the pedagogy involved in teaching the intervention. The Productive Pedagogies Classroom Observation Scoring Manual (Lingard et al., 2001) was used to observe and code 302 lessons across the three time-points.

**Methods**

**Participants**

The initial sampling process was purposive seeking schools where teachers had not previously been trained in CPI. Thus criteria for participation in the study included no prior experience with CPI and agreement to implement the intervention and co-operate in data collection procedures. A clustered randomisation of schools was carried out at the principal's discretion depending on the readiness of schools to participate in CPI training. Fifty-nine Prep to Year 7 teachers, drawn from five primary schools, which had similar socio-demographic profiles, and were situated within one education district in a metropolitan centre in Australia, volunteered to participate. Demographics of participants across groups were comparable for age, years of teacher training and years of teaching experience (see Table 1).
Table 1: Comparison of participants in the Philosophy and Thinking Tools groups by age, teacher training and years of teaching experience.

<table>
<thead>
<tr>
<th>Participant Variable</th>
<th>Philosophy Group (n = 32)</th>
<th>Thinking Tools Group (n = 27)</th>
<th>U</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ¹</td>
<td>Md (IQR)</td>
<td>Md (IQR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in yrs: 1 = 20 - 24 yrs, 2 = 25 - 29 yrs, 3 = 30 - 34 yrs, 4 = 35 - 39 yrs, 5 = 40 - 44 yrs, 6 = 45 - 49 yrs, 7 = 50 - 54 yrs, 8 = 55 - 59 yrs, 9 = 60 yrs; Yrs of teaching experience: 1 = 0 - 4 yrs, 2 = 5 - 9 yrs, 3 = 10 - 14 yrs, 4 = 15 - 19 yrs, 5 = 20 yrs</td>
<td>6 (4-6)</td>
<td>5 (3-6)</td>
<td>369.50</td>
<td>-0.97</td>
<td>0.33</td>
</tr>
<tr>
<td>Years of teacher training</td>
<td>4 (4-4)</td>
<td>4 (4-4)</td>
<td>423.00</td>
<td>-0.20</td>
<td>0.84</td>
</tr>
<tr>
<td>Years of teaching experience ²</td>
<td>4 (3-5)</td>
<td>4 (2-5)</td>
<td>343.50</td>
<td>-1.41</td>
<td>0.16</td>
</tr>
</tbody>
</table>

¹ Age in yrs: 1 = 20 - 24 yrs, 2 = 25 - 29 yrs, 3 = 30 - 34 yrs, 4 = 35 - 39 yrs, 5 = 40 - 44 yrs, 6 = 45 - 49 yrs, 7 = 50 - 54 yrs, 8 = 55 - 59 yrs, 9 = 60 yrs; Yrs of teaching experience: 1 = 0 - 4 yrs, 2 = 5 - 9 yrs, 3 = 10 - 14 yrs, 4 = 15 - 19 yrs, 5 = 20 yrs; Md = median, IQR = Inter Quartile Range

The participant groups

Philosophy Group

Philosophy training involved three steps to help participants understand the processes involved in CPI. On the first training day the two schools in the Philosophy Group worked together with two trainers including the researcher (with ten years of experience teaching Philosophy and eight years of experience in Philosophy teacher training) and another female trainer (with twelve years of experience teaching Philosophy and ten years of experience in Philosophy teacher training). Participants were trained in the process and facilitating CPI, illustrated in Figure 1 (see also Cam, 2006, p. 12).

Figure 1: The process of Philosophical Inquiry.

The trainers engaged in this process (Figure 1) with the participants. Teachers were then given instruction in the Thinking Tools (Cam, 2006) (graphic organisers) used to augment concept development and skill building during CPI. The Question Quadrant (see Cam, 2006, pp. 32-36) was demonstrated as a tool for explicitly teaching students question types and drawing out their philosophical questions. A video of Philip Cam demonstrating a...
bridge activity was shown (see Cam, 1995, pp. 71-72). A question and answer session and perusal of Philosophy resources (Burgh, Field & Freakley, 2006; Cam, 1993a; 1993b; Cam, 1994a; 1994b; Cam, 1995; Cam, 1997a; 1997b; Cam, 2006; Cam, Fynes-Clinton, Harrison, Scholl & Vaseo, 2007; Golding, 2002; 2006; Splitter & Sharp, 1995; Sprod, 1993) concluded Day 1 of Philosophy training. Participants’ handouts included guidelines for Philosophy lessons, the Question Quadrant and black-line masters for the Thinking Tools (Cam, 2006). Mentoring of a Philosophy lesson was completed by the researcher for each teacher in the Philosophy Group. Feedback was given to each Philosophy Group participant via discussion about written feedback.

Day 2 Philosophy training was conducted with each school in the Philosophy Group separately at their own schools on consecutive days. The trainers included the researcher and a male trainer (with ten years of experience teaching Philosophy and eight years of experience with Philosophy teacher training). The combination of trainers offered participants a breadth of experience in CPI and a gender balance. The second day of the Philosophy training involved reflection on participants' Philosophy lessons and mentoring sessions, followed by a concept development activity known as 'The Knife' (Cam, 1993b, p. 39). Students’ comments from across the primary school were presented to assist participants to set themselves and their students set realistic but high expectations. Finally, a series of reasoning activities were presented. Participants planned a Philosophy lesson using the Philosophy resources and trainers' assistance. A question and answer session was conducted and handouts, including reasoning activities, a Philosophy lesson plan template and useful websites were given to each participant, completing the Philosophy intervention.

Thinking Tools Group

Concurrently, Thinking Tools training was implemented with teachers in the three Thinking Tools Group schools to satisfy ethical requirements that all participants receive benefit from participating in the study. Thinking Tools training involved participants in activities using each Thinking Tool, with a conceptual focus on 'listening'; a Venn Figure to make the distinction between listening and hearing, a T-chart to uncover examples and counter-examples for the statement 'You should always listen'; and a Y-chart and Target Figure (Cam, 1995) for conceptual exploration of 'listening'. Participants were encouraged to teach students to use the word 'because' to give reasons, and to ask three whys to assist students to search for reasons. Participants in the Thinking Tools Group were not trained in facilitation of the community of philosophical inquiry or the Question Quadrant. The Thinking Tools training was conducted by the researcher, at separate schools, in the same week, using the same training package and resources. Consistency in the training of the Thinking Tools Group limited confounding effects of disparate training packages, resources, trainers, or timing of the training.

Measures

The instruments included the Productive Pedagogies Classroom Observation Scoring Manual (PPCOSM) (Lingard et al., 2001) and teacher interviews to focus on observable changes in pedagogy of participants over time.

The Productive Pedagogies Classroom Observation Manual (PPCOSM)

The PPCOSM emerged from the Queensland School Reform Longitudinal Study (QSRLS; Lingard et al., 2001), which built on the Schools Restructuring Research
The PPCOSM describes four dimensions of pedagogy including Intellectual Quality, outcomes for which are reported here. Table 2 (excerpt from PPCOSM, Lingard et al., 2001) displays a description of each variable within the Intellectual Quality Dimension; Higher-order Thinking, Deep Knowledge, Deep Understanding, Substantive Conversation, Knowledge as Problematic and Metalanguage.

Table 2: Intellectual quality variables and their descriptions.

<table>
<thead>
<tr>
<th>Intellectual Quality Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Higher-order Thinking</td>
<td>Higher-order Thinking requires students to manipulate information and ideas in ways that transform their meaning and implications. This transformation occurs when students combine facts and ideas in order to synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems and discover new (for them) meanings and understandings.</td>
</tr>
<tr>
<td>2 Deep Knowledge</td>
<td>Deep Knowledge concerns the central ideas of a topic or discipline. Knowledge is deep or thick because such knowledge is judged to be crucial to a topic or discipline. Knowledge is deep when relatively complex connections are established to central concepts.</td>
</tr>
<tr>
<td>3 Deep Understanding</td>
<td>Deep Understanding is shown when students develop relatively complex understandings and demonstrate them by discovering relationships, solving problems, constructing explanations, and drawing conclusions.</td>
</tr>
<tr>
<td>4 Substantive Conversation</td>
<td>Substantive Conversation is evident when there is considerable teacher-students and student-student interaction about the ideas of a substantive topic; the interaction is reciprocal and it promotes coherent shared understanding. Features of substantive conversation include: INTELLECTUAL SUBSTANCE: The talk is about subject matter in the discipline and encourages critical reasoning such as making distinctions, applying ideas, forming generalisations, raising questions. DIALOGUE: The conversation involves sharing of ideas and is not completely scripted or controlled by one party (as in teacher-led recitation). LOGICAL EXTENSION AND SYNTHESIS: The dialogue builds coherently on participants' ideas to promote improved collective understanding of a theme/topic. A SUSTAINED EXCHANGE extends beyond a routine IRE (initiate/response/evaluate). This can occur between teacher and students or student and student and involves several consecutive interchanges. Dialogue consists of a sustained and topically related series of linked exchanges between speakers.</td>
</tr>
<tr>
<td>5 Knowledge as Problematic</td>
<td>Knowledge as Problematic involves presenting an understanding of knowledge as being constructed and hence subject to political, social and cultural influences and implications.</td>
</tr>
<tr>
<td>6 Metalanguage</td>
<td>Metalanguage instruction is evident when there are high levels of talk about; talk and writing; how written and spoken texts work; specific technical vocabulary and words; how sentences work or don't work; meaning structures and text structures; and issues around how discourses and ideologies work in speech and writing.</td>
</tr>
</tbody>
</table>

Each variable is described on a scale of 1 to 5 where 1 denotes absence of the particular variable and 5 denotes its observation amongst most or all students for most of the lesson. A score of one is not a negative interpretation of pedagogy but tends to indicate the presence of a transmission style pedagogy. Scoring four or five tends to indicate a greater...
propensity for a progressive, critical pedagogy involving intellectual inquiry. The observer coded only what was observed.

**Teacher Interviews**

Teacher interview schedules were implemented using a semi-structured approach (Neuman, 2004) to engage teachers in discussion about pedagogical change, resources required, critical junctures experienced as pedagogical change occurred, and dispositions of teachers who might successfully facilitate CPI.

**Study design and procedure**

The (University) Human Ethics Committee approved all ethical aspects of this study. Gatekeeper approval was gained from the government agency presiding over the schools. Voluntary, informed consent was gained from all participants in this study including that data collected may be included in publications, and that they could withdraw their contributions at any time without penalty. Pseudonyms have been used to maintain anonymity.

The study employed an experimental design and included three phases. The experimental group (Philosophy Group) was trained in CPI: a pedagogical innovation. The comparison group (Thinking Tools Group) was trained in Thinking Tools (graphic organisers) (see Cam, 2006), a subset of the Philosophy training. Phase 3 involved the delivery of CPI training for the Thinking Tools Group.

The design for Phase 2 of the study was factorial with independent variables, including the intervention and time (Neuman, 2004). There were two dependent variables; firstly the pedagogy of teachers whilst teaching the Philosophy or Thinking Tools lessons and secondly the generalisation of the pedagogical strategies offered in the intervention to the teacher's 'everyday' pedagogy. The dependent variables were measured using the PPCOSM. The dependent variables discussed in this paper are the Intellectual Quality Dimension pedagogical variables: Higher-order Thinking, Deep Knowledge, Deep Understanding, Substantive Conversation, Knowledge as Problematic and Metalanguage. Phase 2 included three time-points for comparative measurement of pedagogy: time-point 1 (pre-intervention), time-point 2 (3-months post-intervention) and time-point 3 (7-months post-intervention).

**Time-point 1:** Pre-intervention data collection, including teacher interviews and pedagogy observations, occurred wholly before training in the intervention. A lesson of the teacher's choice, their 'best practice' in an 'everyday' lesson, was observed and coded to establish a baseline measure of 'everyday' pedagogy for participants across groups. The intervention was then implemented.

**Time-point 2:** At time-point 2 (3-months post-intervention) observations and pedagogy coding were conducted using the PPCOSM, including an observation of 'everyday' teaching and an observation of either a Philosophy or Thinking Tools lesson, respective of the participant's group. Philosophy lessons incorporated a community of philosophical inquiry and Thinking Tools lessons incorporated the Thinking Tools. Substantive aspects of lessons were decided by participants.

**Time-point 3:** At time-point 3 (7-months post-intervention) a follow-up, maintenance measurement was conducted repeating the sequence of lessons from time-point 2. Semi-structured interviews were conducted with participants across both groups.

**Data analysis**

Two separate statistical procedures were applied to the data. Firstly, a one-way, between-groups ANOVA was conducted at each time-point to explore the impact of the intervention
on pedagogy. That is, statistical comparisons of the classroom observational data were made between the conditions (Thinking Tools and Philosophy) at each time point. Comparisons were computed for the differences between the groups’ “best practice” as identified by the teachers themselves (Baseline, Time-point 2 and Time-point 3) and their pedagogy within Collaborative Philosophical Inquiry or Thinking Tools lessons (Time-point 2 and Time-point 3). Secondly, a one-way repeated measures ANOVA was conducted to compare pedagogy scores within each group across the three time points (Baseline, Time-point 2 and Time-point 3) to measure the changes within each group over time, separately.

Assumptions of normality and homogeneity of variance underpinning the use of ANOVA were investigated. Normality was assessed by checking the variables for skewness and kurtosis. Homogeneity of variance was assessed using Levene's test. Where Levene's statistic was found to be significant the Welch and Brown-Forsythe tests were checked and in most cases concurred with the ANOVA findings. The majority of the variables met the normality and homogeneity requirements, with a few variables displaying modest violations of assumptions. This violation of assumptions to a lower extent is unlikely to affect the validity of the results given that the sample sizes are not small. To avoid a Type 1 error when conducting a separate one-way between-groups ANOVA on 22 variables of pedagogy, a Bonferonni adjustment was applied (Pallant, 2007; Tabachnick & Fidell, 2007), which involved dividing the original alpha level of \( p < 0.05 \) by the number of variables being analysed separately. A higher alpha level of \( p < 0.002 \) was required to denote significance for the between group comparisons. Inter-rater reliability on 31 of the 302 lessons (10%) was found to be 95%, where agreement of coders was deemed to be a difference of no more than one point.

Teacher interviews were transcribed, assigned a pseudonym and labelled numerically. An iterative coding process, using NVivo software, of open coding, axial coding and selective coding (Strauss & Corbin, 1998) was used in a reflexive manner to identify themes and relationships within the interview data in response to the research question.

**Results**

**Between group comparisons: Pedagogy at time-point 1**

A one-way between groups ANOVA was conducted to compare the pedagogy of the Philosophy and Thinking Tools Groups at time-point 1. The baseline between group comparisons, including means and standard deviations for the six variables within the Intellectual Quality Dimension, are presented in Table 3. At baseline no significant differences (\( p < 0.002 \)) between the Philosophy and Thinking Tools Group mean scores were reported for any variable within Intellectual Quality.
Table 3: Between group comparisons of pedagogy at time-point 1 (baseline) for the Intellectual Quality Dimension variables.

<table>
<thead>
<tr>
<th>Intellectual Quality Dimensions</th>
<th>Philosophy Group (n = 31)</th>
<th>Thinking Tools Group (n = 26)</th>
<th>F value (1,55)</th>
<th>p</th>
<th>Eta squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher-order Thinking</td>
<td>2.94 (0.96)</td>
<td>3.00 (0.80)</td>
<td>0.07</td>
<td>0.79</td>
<td>0.00</td>
</tr>
<tr>
<td>Deep Knowledge</td>
<td>1.74 (0.77)</td>
<td>1.81 (0.75)</td>
<td>0.11</td>
<td>0.75</td>
<td>0.00</td>
</tr>
<tr>
<td>Deep Understanding</td>
<td>1.71 (0.74)</td>
<td>1.73 (0.72)</td>
<td>0.01</td>
<td>0.91</td>
<td>0.00</td>
</tr>
<tr>
<td>Substantive Conversation</td>
<td>2.81 (0.95)</td>
<td>2.73 (0.83)</td>
<td>0.10</td>
<td>0.75</td>
<td>0.00</td>
</tr>
<tr>
<td>Knowledge as Problematic</td>
<td>1.39 (0.62)</td>
<td>1.54 (0.81)</td>
<td>0.64</td>
<td>0.43</td>
<td>0.01</td>
</tr>
<tr>
<td>Metalanguage</td>
<td>3.06 (1.09)</td>
<td>3.12 (1.21)</td>
<td>0.03</td>
<td>0.87</td>
<td>0.00</td>
</tr>
</tbody>
</table>

p < 0.002, M = mean, SD = standard deviation, n = sample size. Bolded p values denote significance.

**Between group comparisons: Pedagogy at Time-point 2**

At time-point 2 a Philosophy lesson and Thinking Tools lesson were observed. A one-way between groups ANOVA was conducted on all six variables of pedagogy within Intellectual Quality. Table 4 presents the comparative means and standard deviations for each variable within Intellectual Quality for both groups at time-point 2.

Table 4: Between group comparisons of pedagogy in Philosophy and Thinking Tools lessons at time-point 2 for the Intellectual Quality Dimension.

<table>
<thead>
<tr>
<th>Intellectual Quality Dimensions</th>
<th>Philosophy Group (n = 23)</th>
<th>Thinking Tools Group (n = 21)</th>
<th>F value (1,42)</th>
<th>p</th>
<th>Eta squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher-order Thinking</td>
<td>3.78 (0.52)</td>
<td>3.00 (0.71)</td>
<td>17.75</td>
<td><strong>0.000</strong></td>
<td>0.30</td>
</tr>
<tr>
<td>Deep Knowledge</td>
<td>3.22 (0.80)</td>
<td>1.57 (0.51)</td>
<td>65.55</td>
<td><strong>0.000</strong></td>
<td>0.61</td>
</tr>
<tr>
<td>Deep Understanding</td>
<td>3.22 (0.80)</td>
<td>1.57 (0.51)</td>
<td>65.55</td>
<td><strong>0.000</strong></td>
<td>0.61</td>
</tr>
<tr>
<td>Substantive Conversation</td>
<td>4.04 (0.71)</td>
<td>2.57 (1.08)</td>
<td>29.30</td>
<td><strong>0.000</strong></td>
<td>0.41</td>
</tr>
<tr>
<td>Knowledge as Problematic</td>
<td>4.00 (0.00)</td>
<td>1.62 (0.67)</td>
<td>291.95</td>
<td><strong>0.000</strong></td>
<td>0.87</td>
</tr>
<tr>
<td>Metalanguage</td>
<td>2.13 (0.84)</td>
<td>2.14 (0.48)</td>
<td>0.00</td>
<td>0.952</td>
<td>0.00</td>
</tr>
</tbody>
</table>

p < 0.002, M = mean, SD = standard deviation, n = sample size. Bolded p values denote significance.

Within the Intellectual Quality Dimension the Philosophy Group scored significantly higher (p < 0.002) on Higher-order Thinking, Deep Knowledge, Deep Understanding, Substantive Conversation and Knowledge as Problematic variables. For Metalanguage there was no significant difference between the Philosophy and Thinking Tools Groups’ mean scores.
Between group comparisons: Pedagogy at Time-point 3

Table 5 shows the results from the between group ANOVA on all six variables of pedagogy within Intellectual Quality at time-point 3.

Table 5: Between group comparisons of pedagogy in Philosophy and Thinking Tools lessons at time-point 3 for the Intellectual Quality Dimension variables.

<table>
<thead>
<tr>
<th>Intellectual Quality Dimension Variables</th>
<th>Philosophy Group (n = 25)</th>
<th>Thinking Tools Group (n = 20)</th>
<th>F value (1,43)</th>
<th>p</th>
<th>Eta squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher-order Thinking</td>
<td>4.28 (0.54)</td>
<td>3.45 (0.61)</td>
<td>23.53</td>
<td>0.000</td>
<td>0.35</td>
</tr>
<tr>
<td>Deep Knowledge</td>
<td>3.60 (0.76)</td>
<td>2.55 (0.51)</td>
<td>27.80</td>
<td>0.000</td>
<td>0.39</td>
</tr>
<tr>
<td>Deep Understanding</td>
<td>3.64 (0.70)</td>
<td>2.40 (0.50)</td>
<td>44.36</td>
<td>0.000</td>
<td>0.51</td>
</tr>
<tr>
<td>Substantive Conversation</td>
<td>4.40 (0.58)</td>
<td>3.45 (0.76)</td>
<td>46.02</td>
<td>0.000</td>
<td>0.52</td>
</tr>
<tr>
<td>Knowledge as Problematic</td>
<td>4.12 (0.33)</td>
<td>2.55 (1.10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metalanguage</td>
<td>2.64 (0.49)</td>
<td>2.35 (0.59)</td>
<td>3.26</td>
<td>0.078</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*p < 0.002, M = mean, SD = standard deviation, n = sample size. Bolded p values denote significance.

At time-point 3 the Philosophy Group scored significantly higher (p < 0.002) on variables within Intellectual Quality, including Higher-order Thinking, Deep Knowledge, Deep Understanding, Substantive Conversation and Knowledge as Problematic. Metalanguage scores were not significantly different between the two groups.

Within groups comparisons: Philosophy Group

For within group comparisons across the three time-points the Philosophy Group demonstrated a significant effect for time on all Intellectual Quality variables: Higher-order Thinking, Deep Knowledge, Deep Understanding, Substantive Conversation, Knowledge as Problematic and Metalanguage (see Table 6). Large effect sizes were observed, ranging from 0.54 for Metalanguage to 0.97 for Knowledge as Problematic.
Table 6: Philosophy group's within group comparisons of intellectual quality dimension variable scores across the three time-points: Impact of Philosophy.

<table>
<thead>
<tr>
<th>Intellectual Quality Variable &amp; Time-point</th>
<th>Philosophy Group (n = 20)</th>
<th>M (SD)</th>
<th>Wilks' Lambda</th>
<th>F Value</th>
<th>p</th>
<th>Eta squared</th>
<th>p for pairwise comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Higher-order Thinking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-point 1</td>
<td>3.05 (1.00)</td>
<td>0.23</td>
<td>30.43</td>
<td><strong>0.000</strong></td>
<td>0.77</td>
<td>1/2 0.006</td>
<td></td>
</tr>
<tr>
<td>Time-point 2</td>
<td>3.85 (0.49)</td>
<td></td>
<td>(2,18)</td>
<td></td>
<td></td>
<td>2/3 0.001</td>
<td></td>
</tr>
<tr>
<td>Time-point 3</td>
<td>4.35 (0.49)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/3 0.000</td>
<td></td>
</tr>
<tr>
<td><strong>Deep Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-point 1</td>
<td>1.70 (0.80)</td>
<td>0.09</td>
<td>94.98</td>
<td><strong>0.000</strong></td>
<td>0.91</td>
<td>1/2 0.000</td>
<td></td>
</tr>
<tr>
<td>Time-point 2</td>
<td>3.25 (0.79)</td>
<td></td>
<td>(2,18)</td>
<td></td>
<td></td>
<td>2/3 0.199</td>
<td></td>
</tr>
<tr>
<td>Time-point 3</td>
<td>3.75 (0.72)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/3 0.000</td>
<td></td>
</tr>
<tr>
<td><strong>Deep Understanding</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-point 1</td>
<td>1.65 (0.75)</td>
<td>0.07</td>
<td>113.83</td>
<td><strong>0.000</strong></td>
<td>0.93</td>
<td>1/2 0.000</td>
<td></td>
</tr>
<tr>
<td>Time-point 2</td>
<td>3.25 (0.79)</td>
<td></td>
<td>(2,18)</td>
<td></td>
<td></td>
<td>2/3 0.199</td>
<td></td>
</tr>
<tr>
<td>Time-point 3</td>
<td>3.75 (0.72)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/3 0.000</td>
<td></td>
</tr>
<tr>
<td><strong>Substantive Conversation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-point 1</td>
<td>2.95 (0.95)</td>
<td>0.27</td>
<td>24.04</td>
<td><strong>0.000</strong></td>
<td>0.73</td>
<td>1/2 0.001</td>
<td></td>
</tr>
<tr>
<td>Time-point 2</td>
<td>4.10 (0.64)</td>
<td></td>
<td>(2,18)</td>
<td></td>
<td></td>
<td>2/3 0.085</td>
<td></td>
</tr>
<tr>
<td>Time-point 3</td>
<td>4.50 (0.51)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/3 0.000</td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge as Problematic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-point 1</td>
<td>1.35 (0.49)</td>
<td>0.03</td>
<td>278.85</td>
<td><strong>0.000</strong></td>
<td>0.97</td>
<td>1/2 0.000</td>
<td></td>
</tr>
<tr>
<td>Time-point 2</td>
<td>4.00 (0.00)</td>
<td></td>
<td>(2,18)</td>
<td></td>
<td></td>
<td>2/3 0.248</td>
<td></td>
</tr>
<tr>
<td>Time-point 3</td>
<td>4.15 (0.37)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/3 0.000</td>
<td></td>
</tr>
<tr>
<td><strong>Metalanguage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-point 1</td>
<td>3.15 (1.14)</td>
<td>0.46</td>
<td>10.54</td>
<td><strong>0.001</strong></td>
<td>0.54</td>
<td>1/2 0.003</td>
<td></td>
</tr>
<tr>
<td>Time-point 2</td>
<td>2.05 (0.83)</td>
<td></td>
<td>(2,18)</td>
<td></td>
<td></td>
<td>2/3 0.003</td>
<td></td>
</tr>
<tr>
<td>Time-point 3</td>
<td>2.70 (0.47)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/3 0.332</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05, M = mean, SD = standard deviation, n = sample size. Bolded p values denote significance. Time-point 1 = baseline, Time-point 2 = 3 months post-intervention, Time-point 3 = 7 months post-intervention

Pairwise comparisons revealed a significant (*p < 0.05*) increase in Deep Knowledge, Deep Understanding, Substantive Conversation and Knowledge as Problematic scores between time-points 1 and 2 and 1 and 3, with no significant change from time-point 2 to 3. Higher-order Thinking scores significantly increased across all time-points. Pairwise comparisons of the Metalanguage scores revealed a significant decrease between time-points 1 and 2, a significant increase between time-points 2 and 3 with no significant change from time-point 1 to 3.
Within Groups Comparisons: Thinking Tools Group

Within group comparisons of the Intellectual Quality variables for the Thinking Tools Group displayed in Table 7 reveal a significant effect for time on Deep Knowledge, Deep Understanding, Substantive Conversation and Knowledge as Problematic and no significant overall effect for time on Higher-order Thinking or Metalanguage.

Table 7: Thinking tools group within group comparisons of intellectual quality dimension variable scores across the three time-points: Impact of Thinking Tools.

<table>
<thead>
<tr>
<th>Intellectual Quality Variable &amp; Time-point</th>
<th>Thinking Tools Group (n = 18)</th>
<th>M (SD)</th>
<th>Wilks' Lambda</th>
<th>F Value</th>
<th>p</th>
<th>Eta squared</th>
<th>p for pairwise comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher-order Thinking</td>
<td>Time-point 1</td>
<td>3.11 (0.76)</td>
<td>0.72</td>
<td>3.13 (2,16)</td>
<td>0.072</td>
<td>0.28</td>
<td>1/2 1.000</td>
</tr>
<tr>
<td></td>
<td>Time-point 2</td>
<td>2.94 (0.73)</td>
<td>0.72</td>
<td></td>
<td>0.061</td>
<td>1/3 0.503</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 3</td>
<td>3.50 (0.62)</td>
<td>0.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep Knowledge</td>
<td>Time-point 1</td>
<td>1.78 (0.81)</td>
<td>0.31</td>
<td>18.07 (2,16)</td>
<td>0.000</td>
<td>0.69</td>
<td>1/2 0.894</td>
</tr>
<tr>
<td></td>
<td>Time-point 2</td>
<td>1.56 (0.51)</td>
<td>0.31</td>
<td></td>
<td>0.000</td>
<td>2/3 0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 3</td>
<td>2.61 (0.50)</td>
<td>0.31</td>
<td></td>
<td></td>
<td>1/3 0.007</td>
<td></td>
</tr>
<tr>
<td>Deep Understanding</td>
<td>Time-point 1</td>
<td>1.72 (0.75)</td>
<td>0.41</td>
<td>11.67 (2,16)</td>
<td>0.001</td>
<td>0.59</td>
<td>1/2 1.000</td>
</tr>
<tr>
<td></td>
<td>Time-point 2</td>
<td>1.56 (0.51)</td>
<td>0.41</td>
<td></td>
<td>0.000</td>
<td>2/3 0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 3</td>
<td>2.44 (0.51)</td>
<td>0.41</td>
<td></td>
<td></td>
<td>1/3 0.024</td>
<td></td>
</tr>
<tr>
<td>Substantive Conversation</td>
<td>Time-point 1</td>
<td>2.72 (0.75)</td>
<td>0.68</td>
<td>3.79 (2,16)</td>
<td>0.045</td>
<td>0.32</td>
<td>1/2 1.000</td>
</tr>
<tr>
<td></td>
<td>Time-point 2</td>
<td>2.67 (0.97)</td>
<td>0.68</td>
<td></td>
<td>0.066</td>
<td>2/3 0.066</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 3</td>
<td>3.44 (0.78)</td>
<td>0.68</td>
<td></td>
<td></td>
<td>1/3 0.115</td>
<td></td>
</tr>
<tr>
<td>Knowledge as Problematic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 1</td>
<td>1.56 (0.71)</td>
<td>0.54</td>
<td>6.90 (2,16)</td>
<td>0.007</td>
<td>0.46</td>
<td>1/2 1.000</td>
</tr>
<tr>
<td></td>
<td>Time-point 2</td>
<td>1.56 (0.62)</td>
<td>0.54</td>
<td></td>
<td>0.004</td>
<td>2/3 0.004</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 3</td>
<td>2.67 (1.09)</td>
<td>0.54</td>
<td></td>
<td></td>
<td>1/3 0.014</td>
<td></td>
</tr>
<tr>
<td>Metalanguage</td>
<td>Time-point 1</td>
<td>3.06 (1.39)</td>
<td>0.70</td>
<td>3.50 (2,16)</td>
<td>0.055</td>
<td>0.30</td>
<td>1/2 0.044</td>
</tr>
<tr>
<td></td>
<td>Time-point 2</td>
<td>2.11 (0.47)</td>
<td>0.70</td>
<td></td>
<td>0.779</td>
<td>2/3 0.779</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-point 3</td>
<td>2.33 (0.59)</td>
<td>0.70</td>
<td></td>
<td></td>
<td>1/3 0.131</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05; M = mean, SD = standard deviation, n = sample size. Bolded p values denote significance. Time-point 1 = baseline, Time-point 2 = 3 months post-intervention, Time-point 3 = 7 months post-intervention

Pairwise comparisons show a significant increase in Deep Knowledge, Deep Understanding and Knowledge as Problematic from time-point 2 to 3 and time-point 1 to 3 with no significant difference from time-point 1 to 2. Substantive Conversation scores were not significantly different across time-points. A significant decrease in Metalanguage scores was observed between time-points 1 and 2, with no significant difference between time-points 2 and 3 or 1 and 3.
**Interview outcomes**

Table 8, provides participant's details including pseudonym, research group, school, gender, age, years of teaching experience and year level taught.

Table 8: Teacher interview participants’ gender, age range, years of teaching experience and year level taught.

<table>
<thead>
<tr>
<th>Participant pseudonym</th>
<th>Group</th>
<th>Gender</th>
<th>Age range</th>
<th>Teaching experience (years)</th>
<th>Year level taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anita</td>
<td>Philosophy</td>
<td>F</td>
<td>45-49</td>
<td>≥20</td>
<td>6</td>
</tr>
<tr>
<td>Bob</td>
<td>Philosophy</td>
<td>M</td>
<td>35-39</td>
<td>15-19</td>
<td>4</td>
</tr>
<tr>
<td>Robin</td>
<td>Philosophy</td>
<td>F</td>
<td>45-49</td>
<td>15-19</td>
<td>2</td>
</tr>
<tr>
<td>Focus group (12 teachers)</td>
<td>Philosophy</td>
<td>F</td>
<td>40-44</td>
<td>≥20</td>
<td>2</td>
</tr>
<tr>
<td>Jenny</td>
<td>Philosophy</td>
<td>F</td>
<td>50-54</td>
<td>≥20</td>
<td>P-7</td>
</tr>
<tr>
<td>Mary</td>
<td>Thinking Tools</td>
<td>F</td>
<td>30-34</td>
<td>5-9</td>
<td>6/7</td>
</tr>
<tr>
<td>Ralph</td>
<td>Thinking Tools</td>
<td>M</td>
<td>35-39</td>
<td>5-9</td>
<td>5</td>
</tr>
<tr>
<td>Dianne</td>
<td>Thinking Tools</td>
<td>F</td>
<td>35-39</td>
<td>≤4</td>
<td>3</td>
</tr>
</tbody>
</table>

Interview comments regarding pedagogical change within the Intellectual Quality Dimension are described here and are indicative of teachers’ comments which correspond with the variables within the Intellectual Quality Dimension. Interview outcomes are presented for the Philosophy Group then the Thinking Tools Group.

**Philosophy Group**

Teachers in the Philosophy Group articulated that they were surprised by who was participating and how Philosophy was "allowing the quieter ones to speak up" (Anita, Year 6). Teachers were also surprised by how students were thinking and articulating their thoughts. Anita, commented that she was "astounded by some of the things that they're coming out with" (Anita, Year 6).

Similarly Robyn, a Year 2 teacher, commented that in Philosophy lessons:

"Some of the things that they come out with, just actually blow me away because it's that deeper thinking that they can do, that you don't always appreciate with small children that they have it in there. They can come out with ideas that really ... make you think."

And Alyssa, another Year 2 teacher, commented that in Philosophy lessons she was "surprised at the way the kids could think. ... I certainly believe that kids can have reasonable discussions in Grade 2 now. You know before I thought they can't" (Alyssa, Year 2). These comments attest to how student questions and thoughts were instrumental in pedagogical transformation, particularly regarding the evidence of the Higher-order Thinking occurring within Philosophy lessons.

Teachers described the Deep Knowledge and Deep Understanding emerging within the philosophical inquiry because "there's more depth in terms of dealing with complex things" (Male teacher, Focus Group). Teachers were "seeing the benefits of just getting
[students] to think more deeply and less superficially" (Anita, Year 6) in, but not confined to, Philosophy lessons.

I feel like it [Philosophy] has enlightened me in terms of how, as a tool or instrument to get the children to think more deeply about . . . everything not just, you know, a discussion about a story but . . . how I can get them to be inquiring in science or, you know, just all through the KLAs. (Anita, Year 6)

The skills learnt in Philosophy were transferable across the curriculum. Philosophy helped the students connect ideas across disciplines within the Substantive Conversations occurring in Philosophy lessons. Philosophy helped teachers and students to see Knowledge as Problematic and constructed. Bob, a Year 4 teacher, articulated that this was the 'biggest' change he noticed from teaching Philosophy.

I think that's the biggest thing, I've gone away from content or knowledge to process a lot more, especially in mathematics. I realise now that I was doing not very much of the how. I was always doing the what . . . and the kids aren't used to it and they can't believe you when you say, "I don't care what your answer is" you know . . . "Show me, tell me, don't just you know, don't tell me the end, tell me what was in the middle, how you got there" . . . So that's been the biggest change I think, was just that insight.

'That insight' which Bob, a teacher with 17 years of teaching experience, had gained through teaching Philosophy, allowed him to theorise and implement processes for problematising and co-constructing knowledge across the curriculum.

Jenny, a specialist teacher who taught across year levels commented that teaching Philosophy "changes your perception of your teaching and how you are with kids ... sometimes we can underestimate what kids are thinking" (Jenny P-7). Similarly, Anita (Year 6) revealed that

Philosophy made me question and think about the way that I ... look at issues within the classroom and how valuable the contributions that the children have ... it's made me really think about the questioning techniques that I use.

Anita had 20 years or more teaching experience. She commented that Philosophy "made me think about . . . cleansing, you know, just renewal. It's a renewal process for myself". These comments confirmed the analysis of the pedagogical observations within in the Intellectual Quality Dimension. Teachers in the Thinking Tools Group were positive about their learning but did not attribute pedagogical transformation to Thinking Tools.

**Thinking Tools Group**

Mary, a year 6/7 teacher with between five and nine years teaching experience, when asked about the impact of teaching Thinking Tools, commented:

that's really hard to answer for me because I'm a keen lover of thinkers tools . . . I was involved in writing the whole school programme about Thinking Tools and using the HOTS [Higher-order Thinking Skills] writing in my classroom, so for me there's, I can't really measure change.
Similarly Dianne, a year 2 teacher with less than five years of teaching experience, saw the benefits of using Thinking Tools but was non-committal about their impact on her pedagogy.

_It's really only my third year so it's hard to tell I don't know – maybe. I think when I started doing the Thinking Tools it was when I was . . . in the library and it made . . . organising or planning that unit a lot easier because we were doing . . . introduction to like how books are organised. So using the Thinking Tools meant that they could compare and contrast things._

Ralph, a year 5 teacher with five to nine years of teaching experience, thought that the Thinking Tools had been valuable, but had not altered classroom interactions.

_I think I use [the Thinking Tools] a little bit isolated at times, rather than having that whole approach embedded within the classroom . . . so I probably used them in isolation but I think it does affect you . . . just sort of gets you thinking about how to do things a different way and to promote thinking for the kids, rather than you just dictating what they need to know._

Ralph saw that his need for teacher control was evident during his teaching using Thinking Tools.

_I think I did the, the Y-chart but I did it in a way that was almost very, the kids were at their desks and it was quiet and they were putting their hands up . . . It was teacher led . . . Like I was writing ideas that they were coming out with and they were writing those down._

Ralph realised that when students were submissive they were unable to demonstrate their best possible thinking or learning, and his pedagogy felt inadequate.

_I don't think it [using Thinking Tools] was particularly insightful or promoting them [students] to question . . . _

Ralph was unsure of how to broaden his pedagogical repertoire but had interestingly elaborated that students needed opportunities to question.

Together Mary’s, Dianne's and Ralph's comments affirm the classroom observation outcomes for the Thinking Tools Group. The following year the Thinking Tools Group were trained in Philosophy. When asked to compare Philosophy and Thinking Tools, Ralph commented:

_I think with ... [Philosophy], the kids generated, well we generated the questions ... with the art work we had to justify why we made the, so justify is a really big word, it's that 'because' word ... whereas my teaching of Thinking Tools this year has been more generated by me and helping them come up with ideas rather than, I felt yesterday [the Philosophy Lesson] was more student directed, rather than teacher directed._
After learning how to facilitate philosophical inquiry Mary commented, "I've always said that I was a constructivist teacher and now I truly feel like I am," indicating as Bob had that Philosophy transformed her epistemological understandings and approach. Similarly, Dianne offered an affirmative comparison with regard to pedagogy, "They don't think it [Philosophy] is school work, which is quite funny because it's probably the best schoolwork they'll get to do really . . . we're touching on so many of those pedagogies."

Discussion

Between group comparisons revealed that the Philosophy Group experienced significant broadening of their pedagogical repertoire in Philosophy lessons within the Intellectual Quality Dimension at time-point 2 (3-months post-intervention), which was maintained at time-point 3 (7-months post-intervention). Data presented here provides a detailed, rigorous description of the pedagogical transformation, which occurs in CPI. In this study CPI prompted pedagogical change towards a more interaction-centred pedagogy whereas teaching Thinking Tools remained "more generated by me" (Ralph, Year 5). Teaching using Thinking Tools caused minimal change to the default modes (Cazden, 1988) of transmission style, didactic pedagogy.

Employing Thinking Tools did not naturally involve students in Higher-order Thinking or Substantive Conversation, which were integral within CPI and could be linked to cognitive gains (Topping & Trickey, 2007a, Topping & Trickey, 2007b) and improved student outcomes (Garcia-Moriyon et al., 2005; Trickey & Topping, 2004) experienced when students participate in regular philosophical inquiry.

The within groups comparisons revealed that over time both groups demonstrated positive pedagogical change within the Philosophy and Thinking Tools lessons. Teaching Philosophy was shown to have a deeper, more significant impact on the pedagogical repertoire of teachers than the implementation of Thinking Tools in both between and within group comparisons.

Teachers' comments affirmed the classroom observation data and added insights about how CPI transformed pedagogy, teachers' understandings of their pedagogy and teachers' perceptions and expectations of their students and classroom interactions. These outcomes build on positive indications from prior research, which suggested that facilitation of communities of philosophical inquiry improved pedagogy because it positively impacted teacher thinking and critical awareness and induced reflective practice and active listening to students. In this study teachers highlighted how their listening to students had enabled the inclusion of student voice and had opened up spaces to articulate and consider students' questions and differing viewpoints, and to problematise and construct knowledge. Through CPI teachers began to reflect and realise areas of divergence between their espoused theories and actual practice. As Mary stated after learning to teach Philosophy "I've always said that I was a constructivist teacher and now I truly feel like I am". Teachers realised that previous classroom discussions were less open and dialogic, mainly due to their own limited perceptions and expectations of their students' abilities to listen, think and participate in the dialogic interactions. The structure of classroom interactions had changed through implementing CPI. This change has been Figureatically explained by Splitter and Sharp (1995, p. 149).

Teachers felt compelled to listen when the quieter, less dominant students spoke, and when children asked interesting questions or offered surprising responses outside the teacher's experience and from different perspectives. When the teacher listened and the
students asked questions and shared their thinking, the boundaries on both sides of the Zone of Proximal Development (ZPD) (Vygotsky, 1978) were opened. This differs from didactic structures where teachers impart knowledge, which might pass through the porous boundaries of students’ minds but not the teacher’s, only serving to reinforce the status quo (Scholl, 2014).

Both groups Metalanguage scores were similar across time-points. Teachers in the Philosophy Group had learned to explicitly teach students to question and name questions for a purpose using the Question Quadrant and to encourage students to think in ways, which could be considered higher-order (Ennis, 1987; Facione, 1984; Lewis & Smith, 2009; Maier, 1933; Marzano, 1991; Newman, 1990; Quellmalz, 1987; Resnick, 1987). Explicitly naming, modelling and teaching these thinking processes through employing metalanguage about thinking and questioning is congruent with the aims of CPI, to teach children to think. Further practice CPI and provision of further explicit training in the employment of metalanguage about thinking within CPI, could be beneficial, as previously posited by Roberts (2006). This is worth pursuing through further research and classroom practice to promote explicit teaching of metalanguage for thinking across the curriculum.

Teacher comments support the quantitative findings of this study, providing weight to the argument that CPI transforms pedagogy by broadening teacher's pedagogical repertoire, thus expanding on similar claims of previous studies (cf. Daniel, 1998; Mergler, Curtis & Spooner-Lane, 2009; Roberts, 2006; Roche, 2000, 2011; Yeazell, 1981). The Thinking Tools were however able to be implemented using default (Cazden, 1988) or transmission (Freire, 1970) pedagogies.

Conclusions

This study has shown that engaging in CPI positively impacts the pedagogy of teachers in the Intellectual Quality Dimension of pedagogy as defined by the PPCOSM (Lingard et al., 2001). Analysis of pedagogical observations clearly demonstrates that when teachers engaged in CPI with their students they were all involved in substantive conversations which problematised knowledge and involved both students and their teacher in a dialogic philosophical inquiry which incorporated higher-order thinking, deep knowledge and developing a deeper understanding of that knowledge. CPI significantly broadened teachers' pedagogical repertoires. By this the authors understand that the teachers' pedagogical repertoires became broader, more progressive, open, critical, interactive, responsive and constructivist through engagement in CPI, compared with their baseline pedagogy which they had chosen as their “best practice”. This was recognised in both the analysis of classroom observations and the teachers’ interview comments regarding the change in their pedagogy emanating from their involvement in CPI.

The results presented here affirm and build on prior research regarding the positive impacts of CPI on pedagogy (Daniel, 1998; Mergler, Curtis & Spooner-Lane, 2009; Roberts, 2006; Roche, 2000, 2011; Yeazell, 1981). Collaborative Philosophical Inquiry can be instrumental in transforming teacher pedagogy because the teachers themselves engage in critical, creative, caring and reflective thinking about their students’ philosophical questions, which are often new and novel to the teacher. This experience is instrumental in reconstructing the thinking and pedagogy of the teacher.

The inference drawn is that this transformation of pedagogy is linked to the positive social and academic student outcomes referenced in prior research regarding the impact of CPI on student outcomes (Garcia-Moriyon, Rebollo & Colom, 2005; Millett & Tapper, 2012; Topping & Trickey, 2007a, 2007b; Trickey & Topping, 2004, 2006). In particular Topping & Trickey (2007a) have noted cognitive gains for students who engaged in CPI which were
sustained two years after the student engagement in CPI ceased. Hence, engaging in CPI becomes a powerful vehicle for simultaneously involving teachers and their students in deep transformational learning. CPI that engages teachers and their students in critical, creative, caring and reflective thinking (Lipman, 2003) is thus an appropriate, efficient and desperately required response to the demands of educating students and mobilising learning within and amongst the teaching workforce in the 21st Century.

Acknowledgments

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References


Educating for sustainability with design-based Learning

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Abstract: Design-based learning (DBL), a pedagogy rooted in design-thinking and experiential education, offers educators a new approach to addressing the complex and ambiguous problems of sustainability. This paper examines the application of DBL to the development of a three-acre interactive sustainable outdoor learning centre suitable for young children, adults and handicapped individuals. In keeping with DBL, the project served as the education context for university students to learn aspects of sustainability utilising iteration, multi-disciplinary collaboration, user-centeredness, and divergent thinking. Process description illustrates students adopting a design process mindset, likely leading to greater innovation and persistence when addressing sustainability problems and understanding the notion of life cycle thinking. The DBL model provides a unique approach to education, integrating experiential, problem-based elements with insights from design thinking.

Keywords: design-thinking; Design-based Learning (DBL); multi-disciplinary; innovation; experiential; problem-based

Introduction

This paper examines the application of design-based learning (DBL), a new pedagogy rooted in the design processes and design thinking (Bruck & Middlebrooks, 2010). In the case of this paper, we focus on DBL applied to sustainability education. Drawing from experiential learning methods such as problem-based learning (PBL), DBL applies specific activities aligned with design thinking to create a problem-solving heuristic more suitable to the ambiguity and multifaceted nature of real world problems, such as those problems engaging issues of sustainability. DBL has been introduced as a collaborative, project-based approach for contained settings, e.g., within the context of a semester-long classroom-based course (Kolodner, 2002). This paper, however, reconceptualises the notion of DBL, providing a much more extensive alignment with real world design processes. We describe a more comprehensive application of DBL through a multi-semester, real-world project in partnership with an external client focused on sustainability education.

Sustainability as both concept and practice continues to grow in importance and relevance, and has increasingly become part of the success equation for individuals, organisations, communities, and nations (Cohen, Eimicke, & Miller, 2015; Weeks, 2015). As generally defined, sustainability refers to our ability to, “. . . meet the needs of the present without compromising the ability of future generations to meet their own needs,” across three overlapping areas of activity and interest: economic, social, and environmental (United Nations General Assembly, 1987, 2005). Interestingly, it seems the more one understands about sustainability, the more critical and ubiquitous the notion and its related activities seem, at both the macro, conceptual level, as well as the micro, individual, applied level.

This paper begins with a brief overview of the effort and challenges of teaching sustainability, and then introduces DBL – a pedagogical approach rooted in design thinking and well-suited for the nature of learning sustainability and the dispositions aligned to sustainable development activity. The second half of the paper describes an example of DBL
Teaching sustainability

What do students need to know, do, or be like to effect sustainable actions into the future? Critics initially argued that sustainability education (sometimes referred to as sustainability literacy) was of questionable and perhaps limited efficacy given the dynamic and ambiguous (and often normative) nature of sustainability problems (Jickling, 2001). The past decade has produced a number of productive insights, and the range of curricula and program structures delivering sustainability education continue to be mapped and refined (O’Byrne & Nicholas, 2015). The kind of problems that relate to sustainability require educators to consider the broader capacity of students. For example, Dale and Newman (2005, p. 358) specify a set of facts-based and process-based skills that define sustainability literacy. However, they make the point that, “The basic requirement of sustainable development literacy is ‘adaptive flexibility, meaning the ability to address changing conditions through a process of continuous adaptive learning and the possibility to initiate new development trajectories.’” (Rammel, 2003, p. 397). In other words, students need to be excellent creative problem-solvers.

Wals (2014, p. 13) notes, “There are signs of Higher Education Institutions developing and introducing new forms of learning that can help people understand and engage in sustainable development.” Efforts to educate students in sustainability in an adaptively flexible manner have emphasised what students do as much as what they should know or be like, and has taken the form of problem-based learning (advocated by Johnson, 1999, and Jucker, 2001; exemplified by Steinemann, 2003, and Dale & Newman, 2005). The experiential nature of problem-based sustainability learning is further enhanced when embedded in real-world connections and engaging multiple disciplines (Alvarez & Rogers, 2006; Domask, 2007).

However, while the experiential focus of the problem-based curriculum addressed the broad and ambiguous nature of sustainability problems, educators have been as focused on pedagogy designed to induce a shift in how students see the problems, i.e., their paradigm (Stubbs & Cocklin, 2008). For example, Williams (2008) argues for a more holistic and systems approach, and Sipos, Battisti, and Grimm (2008, p. 69) organise learning into a framework they call “transformative sustainability learning” utilising “…learning objectives corresponding to cognitive (head), psychomotor (hands), and affective (heart) domains…” based on Bloom’s taxonomy (Bloom, Masia, & Krathwohl, 1964).

The problems of sustainability are complex, dynamic, and ambiguous, and involve multiple stakeholders, and require expertise and action from multiple fields of study, and thus require multiple methods of teaching (Jabareen, 2011). Cutting across many levels of activity and replacing “solution” with measured improvement, issues of sustainability might readily be categorised as “wicked” problems. As UNESCO (1997, p. 1) highlighted over a decade ago, education for sustainability requires, “A trans-disciplinary, holistic understanding of the world’s problems…” The challenging nature of sustainability problems means that educators must effectively build sustainability literacy and encourage engagement and action.

Building on the Generic Sustainability Competencies (reworked by Wals, 2014), Middlebrooks, Miltenberger, Tweedy, Newman and Follman propose characteristics of sustainability leadership as a focus for educators to effect changes in how students approach, address, and persist in solving those problems, i.e., a change in process and mindset. Those in action, highlighting a real-world project that engaged college students in a sustainability-based design and the distinguishing characteristics of this unique pedagogy.
characteristics include: “. . . (1) the ability to see organisational culture, particularly through the informed lens of the triple-bottom line of sustainability, (2) the knowledge and awareness of the various balances and interconnections between bottom lines in the pursuit of sustainable ends, (3) a desire to make a positive difference, with the big picture and long term, (4) the ability to influence in a socially just manner, and (5) the ability to manage behavioural and systems change.” (2009, p. 34) The question remains, however, how best to imbue and develop these capacities in students.

Design-based Learning for sustainability education

The many and varied fields of design provide numerous process models for creative problem-solving, particularly in dynamic contexts requiring iteration throughout the process. The creative problem-solving approach used by designers, primarily gleaned from engineering, was identified decades ago as a significantly different approach to learning (Schauble, Klopfer, & Raghavan, 1991). Elements of these design processes have been co-opted into learner-centred and inquiry-based learning and project-based inquiry (see Kolodner, Camp, Crismond, Fasse, Gray & Holbrook, 2003; and Fortus, Dershimer, Krajcik, Marx, & Mamlok-Naaman, 2004 for early examples of this work). Current work continues to pull individual process elements from design, including learning by making (Ke, 2014), engaging students in real-world design problems (with design briefs), and having students conduct user-centred research (Kim, 2014). Wals (2014, p. 13) emphasises the importance of this development, “Introducing and developing new forms of learning that can handle ill-definedness in an ever changing world is an important component of re-orienting higher education towards sustainability.”

Design-based learning builds on this evolving pedagogy, and provides an alternative approach to educating for sustainability. Within the context of design process as creative problem-solving, DBL activities emphasise the characteristics of design thinking. Thus, DBL strives to develop the design thinker's habits of mind, i.e., the way they uniquely see place, process, and purpose (and consequently act). Tim Brown of the design firm IDEO describes design thinking as, “an approach that uses the designer's sensibility and methods for problem solving to meet people's needs in a technologically feasible and commercially viable way. In other words, design thinking is human-centred innovation” (IDEO, 2015, Our Approach, para.1). Although Brown (2009) elaborates on what a design thinking approach might entail, he does not address the notion of how individuals might develop their design thinking capacity, nor how instructors might foster that development (i.e., DBL). In an effort to translate the broad and valuable ideas of design thinking into a workable pedagogical approach, Bruck and Middlebrooks (2010, p. 20) provide the following definition: “Design thinking is a cognitive approach to engaging problems that embodies a specific mindset that is: (a) human - centred (and user-focused), (b) collaborative, (c) non-linear, divergent, and iterative, (d) multi and cross-disciplinary, (e) explorative - comfortable assuming purposeful ambiguity, and (f) integrative – striving for feasibility, viability, desirability.”

Engaging and developing these habits of mind enables students to more successfully and creatively work through ill-defined and dynamic problems. This efficacy can be illustrated by aligning design thinking characteristics with a problem-solving process. For example, a general approach to the process of innovation asks individuals to work through various activities in three major phases: Understanding – determine what we know about the problem, context, stakeholders, history, etc.; Imagining – generate the most creative ideas for addressing the problem; and Implementing – decide on activities, resources, timelines, etc. necessary to bring the idea to reality (Dundon, 2002). DBL embeds and aligns design thinking elements within these general innovation phases – understanding, imagining,
implementing - to put greater emphasis on the problem-solving activities that lead to greater innovation.

The distinguishing characteristics of DBL activity focus on enhancing design thinking: (a) adopting a user-centred approach and requiring user-centred research to acquire user perspective and inform design decisions, (b) incorporating multiple iterations toward the final product, (c) imagining for maximum idea generation using multiple disciplines and perspectives, and questioning one's own conceptions, (d) engaging in collaboration and co-design through group design activities, (e) modelling and pushing students beyond their preconceived creative limits, and (f) prefection and reflection on the process as it unfolds and iterates. This framework (initially) focuses student attention on a limited number of design thinking capacities during each part of the process, even though the ultimate goal is to possess and apply all design thinking habits throughout the entire process and ultimately further enhance their learning. Table 1 lays out the design thinking capacities by innovation phase, along with aligned DBL activities. In turn, we briefly explain how DBL was executed throughout the project within each phase of innovation.

<table>
<thead>
<tr>
<th>Design Thinking disposition</th>
<th>Design-based Learning</th>
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| **Understand** the Problem, Person, Process, Context | Adopting a user-centred approach  
| User-centred - mindset that focuses on the user and how they experience and feel | Engaging in user research  
| Explorative – mindset that assumes purposeful ambiguity and curiosity | Preflection and reflection on the process  
| **Imagine** the Possibilities and Impossibilities | Modelling and pushing beyond pre-conceived limits of generating ideas  
| Divergent - mindset of generating many, many ideas for a single problem | Imagining and/or engaging using multiple disciplines and perspectives  
| Multi-disciplinary - mindset that engages many minds and pursues multiple areas of expertise | Incorporating multiple iterations and prototyping  
| Iterative - mindset of always seeing solutions in process - assessing and improving |  
| **Implement, Assess, Iterate** | Inviting collaboration and co-design  
| Collaborative – mindset that working with others is always far more effective | Assessing competing goals of the solution and revising  
| Integrative - mindset of attending to and balancing multiple criteria, particularly viability, feasibility, and desirability |  

Table 1: Design thinking capacity and Design-based Learning element by innovation phase.
DBL in action: Art of sustainable gardening

The complex problems of sustainability require innovative solutions, and educating others about this complex notion compounds that complexity. This DBL project, conceived of by two University of Delaware (UD) faculties, sought to address the question: How could we utilise design-based principles, specifically design thinking, in a complex, interdisciplinary design challenge centred on sustainability to broaden student’s mindsets in their approach to and persistence of solving complex real-world issues? Simply put, how can DBL be used in sustainability education? In this case the design challenge was for the benefit of a community not-for-profit organisation, Tyler Arboretum (TA), located in Media, Pennsylvania. Specifically, faculty were interested in whether mindsets related to design thinking habits of being user-centered and explorative; divergent, multi-disciplinary, and iterative; as well as collaborative and integrative, could be integrated into a real-world pedagogy and consequently more directly targeted for development.

Nine students from a variety of majors enrolled in a spring semester course, ART 367. During the first week of the class, students were introduced to the entire scope of the project. Tyler Arboretum sought to develop a Sustainable Garden Learning Center (SGLC), thus expanding educational quality and civic engagement associated with their organic vegetable garden to include a larger area of three acres including a variety of ecological niches and a universal garden demonstrating sustainable practices that could be implemented on a residential scale while maintaining aesthetic appeal. Three of the nine students voluntarily continued into the summer to complete the project.

The project included data from observations documented in field notes throughout the spring and summer semesters as well as anonymous final course questionnaires distributed to students regarding various situations throughout the project. In observation notes, students were referred to by number to ensure anonymity of participants. The project was conducted on and off campus in the design project location, which is typical of a design course with an embedded community project.

Understanding: User-centred and explorative

The Understanding phase of the innovation process focuses on examining and researching what is known about the problem, context, stakeholders, costs, outcomes, etc. In the DBL approach, understanding emphasises user-centeredness and exploration. User-centeredness involves conducting research in such a manner that produces deep empathy, i.e., literally walking in the user’s shoes (Brown, 2009). Further, the DBL process is explorative throughout all phases. Thus, as the process unfolds (e.g., ideas are generated and implemented), understanding the user, context, and other factors quite often results in substantially altering the nature of the problem and subsequent ideas for solution (which links to the iterative mindset in the next section).

Of more general importance to educators, one underlying premise of this pedagogy is that identifying the problem is at the core of the student’s problem-solving challenge. Thus, DBL educators can encourage students to work on self-identified problems within an individualised area of interest utilising the DBL prompts for each phase of understanding, imagining and implementing (again, see Table 1).

To understand the user, students were initially tasked with interviewing TA’s Director, Education Coordinator, Horticulturist and Organic Gardeners regarding goals and expectations of the SGLC project. TA staff outlined the four concrete and abstract main
objectives of the conceptually based SGLC: (a) educate the public about sustainability, (b) engage the public in the natural world, (c) manage site-specific drainage and runoff issues, and (d) ensure universal accessibility.

In the design studio, students worked in small groups to synthesise information; working collaboratively to understand the intricacies of the problems and the client’s needs. Further questions were identified giving students an opportunity to seek additional information. The explorative approach asks individuals to assume purposeful ambiguity, particularly as they share their differing solutions. In our observations, this contributes to reconceptualising the problem and context, and subsequently generating new ideas.

As students conceived of designs to exhibit sustainable practices, prototypes were built including implementation of a ¼ acre organic vegetable demonstration garden at TA. Time spent in this garden allowed several students and the faculty to engage the stakeholders (TA visitors) to improve the initial design. Conceptual master plans for the SGLC reflect the continual user-centered research, thereby giving the student designers a grounded confidence in the presented solutions.

**Imagining: Divergent, multi-disciplinary, and iterative**

The Imagining phase of the process focuses on generating ideas, preferably creative ideas for solution. The DBL approach emphasises divergent thinking, multi and cross-disciplinary involvement, and an iterative approach. Divergent thinking comprises the foundation of creative thinking, and many methods have been developed to catalyse idea generation. DBL enhances divergent thinking by engaging multiple and very distinct disciplines, inviting individuals to participate in the process from the point of view of their field of expertise (Kembel, 2010). This allows one to see the problem in new ways by adopting new and alternative perspectives, and helps students understand that their view or solution may not be true (Somyurek, 2015). DBL also enhances divergent thinking by establishing a psychological culture conducive to taking mental risks with ideas, and accepting that ideas are all subject to revision.

To facilitate divergent thinking throughout the process, students participated in multiple design charrettes. A charrette is a planned instance of intense collaborative designing used frequently by designers, architects, and artists. The first two-hour charrette focused on the vegetable garden design. The second focused on designing prototypes (e.g., interactive sculptures illustrating concepts of sustainability) used at the AG DAY display, and involved the students and external experts. Organic gardeners were present to listen to and answer questions. Observations during this charrette found that the students with less experience in the field of practice (gardening) were offering more creative solutions and generating more ideas than those familiar with gardening. This lends valuable insight into the benefit of engaging design collaborators across disciplines.

The final charrette focused on the overall three acre SGLC. Participants in this last charrette purposefully included individuals from a variety of disciplines. Student #2 highlighted this multi-disciplinary approach, stating:

*I think that the group design charrette process was quite successful. We had angles that bordered from landscape design, to fine art, to agriculture, to biology. All of these different fields of expertise were useful in putting together a design that was both visually appealing as well as technically feasible.*
And student #5 noted, “The group charrettes had a great environment, a sort of whimsical and liberating brainstorm, where all of our thoughts could be expressed without fear of being considered impossible or ridiculous.”

Students were further prompted to think divergently by again prompting them with purposeful ambiguity. During the final charrette, once students were comfortable with the results of their design, the professors purposefully surprised the students with additional criterion including a design theme and more restrictions on material and spatial layout. Contrary to prior findings (Jin & Chusilp, 2006), faculty observed that the introduction of additional information helped student designers overcome initial ideas and experience the need for and power of iteration. Many students were uncomfortable and annoyed by having to leave their design ideas on the cutting floor, but instructors worked to assure that the new criteria would generate new ideas and enhance the design. In fact, student #5 concluded, “Slightly chaotic, yet I think the fast pace made for extremely effective thinking. It was great to bring all of our ideas together into one collaged design.”

Adding to the creative, dynamic, and divergent aspect of the process, students created scaled structures of their designed garden element. Prototyping further solidifies concepts and adds a necessary level of persistence to the process (Brown, 2009). Once individual garden structures were physically modelled, students worked collaboratively to find materials that would be suitable for building the elements to scale. As student #2 said, “Seeing things actually come to life and become tangible was quite rewarding. It’s great to be able to take something from the mind, to the paper, to the physical form.” During this phase, concepts necessarily changed as needed to fit available resources - a key component to building an individual’s ability to persist with and address complex challenges.

Other prototyped elements built to demonstrate sustainable gardening practices including composting, rain harvesting, solar power, reusing materials, encouraging wildlife and organic gardening, were brought to a separate public forum. That forum, AG DAY, was an event sponsored by University of Delaware’s College of Agriculture and Natural Resources to showcase, celebrate and educate the public about modern agriculture. With over 5000 visitors in attendance, students and faculty could observe reactions, engage with visitors, and note areas for improvement. Student #1 commented:

*The Ag Day Display was something that was very well-thought out and executed precisely to how we had designed it. Having been able to learn different things from the landscape students and them seeing the art students . . . designs – it seemed like a perfect match.*

**Implementing: Collaborative and integrative**

Lastly, the implementing phase of the process focuses on putting ideas into practice. In implementation, the DBL approach emphasises collaboration and integrative thinking. DBL undercuts the common myth of the lone genius solving problems or emerging from deep thought with that one great idea. Student #1 stated, “By working together we weighed the pros and cons of all the placements of the plants and came to a great decision and design.”

Collaboration through all phases of the process allowed implementation to proceed in an iterative, creative, and user-centred manner. And, research suggests that learners gain different perspectives while interacting in collaborative problem-based learning environments (Moallem, 2003). The integrative approach of DBL brings its own triple bottom line to bear on any solution: the integration of viability, feasibility, and desirability. Sustainability problem-solving – striving to balance economic, environmental, and social sustainability – would be well served by considering particularly the desirability of solutions.
During the TA project, students worked in a variety of collaborative groups throughout the project as they were tasked to integrate information from the understanding phase with a high level of imagination. Designs created in small groups were forced into expanded iteration and students began to yield their initial problem responses to broader and more creative design solutions. The final plan for the SGLC went through six revisions as a result of deliberate and client-driven criteria changes. Student #2 commented,

*And to be able to share that with others in a visual way – well, that is just the ultimate goal. It really gets the message and idea of sustainable gardening out there, as something very practical and possible.*

Researchers noted students became aware that implementation of design ideas leads to further exploration of a design challenge, stemming from lessons learned during the entire process.

**Conclusion**

The execution of DBL activities requires attention to place and purpose, incorporating much from other forms of experiential learning and creativity research such as establishing a culture of trust and inspiration to encourage intellectual curiosity and risk, encouraging divergent thinking, and facilitating student’s active involvement. However, the distinguishing characteristics of DBL integrate design thinking into the pedagogical process. As noted previously, the learning experience is crafted such that students: (a) adopt a user-centred approach and engage in user-centred research to acquire user perspective and inform design decisions; (b) incorporate multiple iterations toward the final product; (c) imagine for maximum idea generation using multiple disciplines and perspectives, and question their own conceptions; (d) engage in collaboration and co-design through group design activities; (e) observe the process modelled and get pushed beyond their preconceived creative limits; and, (f) engage in prefection and reflection on the process as it unfolds and iterates.

Design-based learning creates the conditions for students to engage in and develop design thinking by involving students in the design and implementation of real projects. Students in the TA project were exposed to a designerly way of thinking, being, and functioning in a problem-solving context. They were guided through a design process heavily dependent on expectations of maximum creativity. Throughout the process students were challenged to strike an integrative balance between feasibility, viability, and desirability. Faculty observed that students consistently met these challenges and exceeded expectations in their use of found objects (viability), starting the garden from seed at the UD greenhouse to planting and harvesting at TA (feasibility), and finally observing reactions to the prototypes (desirability) and adjusting the design accordingly. Seeing the design process from conception to construction allowed students to feel a real sense of both accomplishment and understanding of design stages. Overall, based on observing student activity, engaging in DBL provided a rich process and developing habits of mind aligned to effectively addressing the complex problems of sustainability.

Empirically-based fields of study dealing with real world multi-varied problems would likely be most suitable to the DBL approach and related activities. Educators in disciplines requiring acute problem-solving skills would benefit from the use of DBL process and strategies to develop design-thinking habits of mind and an expanded repertoire of problem-solving approaches. The authors have utilised DBL in classroom settings to develop
students’ abilities to better define problems, imagine solutions and implement both specific and comprehensive solutions for projects of varying scale, scope and topics. For example, recent DBL projects include the design of a housing development incorporating principles of sustainability and universal design; an educational exhibit for a major international flower show; and, a portable travelling educational exhibit for non-profit institutions. Just as case studies are used to develop law student’s skills and knowledge of legal process, DBL embeds the skills and cognitive processes necessary to grapple with the complex problems related to sustainability, and holds great promise for further developing sustainability education.

References


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Disposition or dislocation? Why do foreign and local students’ learning styles differ?

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\textbf{Abstract:} This paper explores the relationship between culture and learning style by investigating three groups: Chinese students enrolled in universities in China and Australia, and Australian students attending Australian universities. Semi-structured interviews were emailed to all participants in their native language. Specifically, the data is examined in relation to commonly held cultural stereotypes about Eastern and Western learning styles. Comparisons of Chinese and Australian preferred learning styles were indistinguishable for students enrolled in home/local institutions (though reasons for holding these preferences differed between cultures). However, the learning styles of Chinese students enrolled in Australian universities did differ from the other two groups. These results suggest that dislocation and language context factors, and not culture \textit{per se}, might better explain the previously observed differences in the learning styles between Western and Asian students at Western universities.

\textbf{Keywords:} learning styles; culture; Chinese (Asian) university students; Australian (Western) university students

\textbf{Introduction}

Australia’s international trade in education services is not economically insignificant. The value of the higher education sector for the 2008-09 financial year is reported to have been $9.5 billion dollars (Australian Bureau Statistics, 2010). Bradley (2008, p. 88) reports that “Australia’s future will be determined by how well it performs in an economy driven by knowledge-based activities as well as its traditional industries”; this report also acknowledges the obvious truism that although Australia has been “extremely successful in developing education as an important export industry”, there remains room for further improvement (Bradley, 2008, p. 88).

Bradley’s report together with the fact that vast bulk (some 80%) of Australian international students are drawn from Asia, including East, South, Middle East and Southeast Asia (Australian Education International, 2010), has led to an escalation of research into the needs of Asian international students. Moreover, the recent slump in international student enrolments—typically attributed to the appreciation of the Australian currency and the \textit{Global Financial Crisis}—suggests an examination of possible strategies to improve Asian students’ Australian educational experience is especially timely. A large body of previous research has apparently identified an East-West difference (EWD) in learning styles and preferences (Boland, Sugahara, Opdecam and Everaert, 2011; Terry, 2001; You & Jia, 2008) and other research indicates there are clear benefits from matching teaching and learning styles (Gilakjani, 2012; Zhang, 2006). Accordingly, some researchers suggest educators should adopt as many teaching modes as possible to accommodate these culturally diverse students’ need (Morgan, 2010; Tulbure, 2011).

However, for modification of educational service delivery to be a potential solution to dwindling international enrolments, it is essential to first establish whether the claimed EWD is empirically supported. Given substantial methodological limitations in past papers, the true extent (if any) of the claimed EWD remains to be established. Methodologies previously
employed to establish the EWD are fundamentally culturally biased—being especially plagued by a well-established social cognitive bias known as the out-group homogeneity (OGH) effect (Quattrone & Jones 1980). Furthermore, past papers have focused heavily on Asian students within Western settings in comparison to local Western students. Such research designs are simply unable to identify whether any observed group differences are due to dislocation to a new culture or due to enduring cultural differences in inherent learning preferences. This paper examines East Asians’ learning preferences in both international and domestic settings in comparison to Anglophone Australian students in domestic universities. The next section critically reviews the existing literature.

**Do learners really differ across cultures?**

Trommsdorf and Dasen (2001 cited in Charlesworth, 2008, p. 116) argue that if one accepts that culture is “a certain commonality of meaning, customs and rules shared by a certain group of people and setting a complex framework for learning and development”, and then one also implicitly acknowledges that there is a connection between culture and learning styles. Yet the relationship between culture and learning style continues to be hotly debated, in part due to the dramatic increase of international enrolments in Western higher education institutions.

A summary of past research clearly indicates that group differences in local/Western and foreign/Eastern students learning styles and preferences can be observed. Those holding a culture-deterministic view argue that learning styles are shaped by, and embedded in, culture (Charlesworth, 2008; Jin & Cortazzi, 2006; Marlina, 2009; Prasad, Mannes, Ahmed, Kaur & Griffiths, 2004; Wen & Clément, 2003). This view implies lecturers should adapt to the learning styles rooted in their students’ culture. Others argue contextual factors dictate learning styles (Campbell & Li, 2008; Jones, 2005; Ryan & Hellmundt, 2005; Wong, 2004). This alternative perspective implies that although culture affects preferred learning style, with sufficient time and support, all students regardless of culture, are able to flexibly adapt to any learning environment so as to achieve their personal educational goals.

Clearly these disparate views have policy and practice implications for the increasingly internationalised Australian higher education system. Culture-determinists (Wang & Moore, 2007; Prasad, Mannes, Ahmed, Kaur & Griffiths, 2004; Ryan & Hellmund, 2003; Park, 2000; Ramburuth, 2002; Kennedy, 2002) have empirical support for their view. Accepting this evidence at face value, the implications for both the fairness of university programs and marketability of higher education to overseas students quickly become evident. Furthermore, culture-determinism necessitates institutional solutions that involve administrators and academics adapting their course designs and teaching styles to match the needs of a diverse student body.

Starting from the premise that “it is not always easy, perhaps not even possible, to completely divorce ourselves from the culture in which we were brought up,” (p. 2.) Prasad, Mannes, Ahmed, Kaur, and Griffiths (2004) found that Asian international university students are less likely to question others or to offer their own ideas (relative to their domestic peers in class). For these researchers, it was the students’ particular culture that decided two important educational beliefs – i) it is inappropriate for students to express their ideas publicly, and ii) commenting on unimportant issues in class wastes other students’ time. More recently, Ha Phan (2011) has argued that East Asians choose not to publicly express their views for intrinsic and strategic reason—that is, not to share their knowledge with their competitors. Therefore, these researchers concluded that Asian culture produces reserved students and gives way to an Authoritarian, monological, teaching style. Their telling
conclusion that educators must endeavour to understand other ways of learning (Prasad et al, p. 2) tacitly implies that it is ultimately the lecturers’ responsibility to adjust their teaching style to accommodate foreign learning styles.

Yet Marlina’s (2009) qualitative study of four international students enrolled in an Australian university challenged the conception that Asian students are passive in class and the notion that this is culturally determined. By focusing on the extent to which these students’ participatory style of learning/tutorial was influenced by their culture and to what extent it was affected by the other contextual factors such as their lecturers/tutors, classmates and/or the new environment, the author concluded that the latter (i.e. the specific context in which the students conduct their studies) played a more decisive role than culture in shaping observed learning styles.

Wang and Moore (2007) explored learning style preferences of off-shore Chinese postgraduate students enrolled in an Australian transnational program. They collected data from two district groups of participants before and after their attendance at a one-week intensive training course delivered by Australian academics in both English and Chinese language. They claimed that the group who had prior teaching experience preferred teacher-directed and individual learning whereas teacher administrators preferred self-directed and tutorial type of group learning. The authors again concluded culture was at most a secondary influence on learning preferences—participants’ previous working experience was the main influence.

Using the Honey and Mumford Learning Styles Questionnaire, Charlesworth (2008) studied international students from China, Indonesia and France enrolled in a Western higher education institute, in the hope of identifying distinct cultural influences on learning styles. Significant differences in learning styles existed for the three cultural groups in the first semester of study. However, over time (by the sixth semester) these differences evaporated. Charlesworth posited that the observed convergence was directly due to natural enculturation that occurs with the more time spent within a foreign working environment. Similarly Wong (2004) also explored the malleability of international students’ learning styles by examining a group of undergraduate students who were from Asia and enrolled in universities in South Australia. This research initially found that Asian students tended to prefer a more student-centred learning style but over time they were adapted to the local teaching and learning style. Wong’s findings reiterated that although learning styles are culturally influenced context is the more important determinant.

**Policy implication of past research**

Taken at face value, the claims of some research conducted (Charlesworth, 2008; Marlina, 2009; Wang & Moore, 2007; Wong, 2004) imply that Australian universities need not adjust education delivery to suit foreign students’ learning styles. Moreover, the available research findings highlight the inappropriateness of relying on cultural stereotypes in relation to learning styles, which were largely developed by western theorists (Terry, 2001) and have continued to be perpetuated by Western researchers. Furthermore, the diversity of learning outcomes for foreign students observed in the studies reviewed contradicts the view that students from a given culture form a homogeneous group. In fact, the broad conclusion from past research is that international students exhibit a diverse and malleable range of learning styles, which are not necessarily distinct from those of local students. Educators and cross-culture researchers would also do well to remember that a large body of social psychological work demonstrates people *perceive* those from other (out-group) cultures as more homogenous than the objective evidence would support: the so-called *out-group homogeneity bias* (Quattrone & Jones 1980).
The limitations of past research: The need for further evidence

However, it is important to note that the designs of the studies reviewed are in many aspects unable to answer the question the researchers set for themselves. For example, these papers failed to compare international students in an unfamiliar ‘foreign’ university environment with those studying at their own domestic universities. Although the past results concord with the principles of humanist philosophy they may, at least in part, also be due to participant self-selection. That is, over time, those international students who were unable to adapt to the new cultural environment may have discontinued their enrolment over the study period (e.g. before the sixth semester follow-up in Charlesworth’s study), thus falsely creating the claimed enculturation effect. More pertinently, the changes observed in past studies could also be directly due to participation in higher education, per se and might be entirely unrelated to enculturation. A more rigorous control group design (i.e., including a foreign group studying in a familiar/home environment) is therefore necessary in order to establish the unique influence (if any) of cultural environment and pre-existing culture on learning behaviour in a foreign environment.

As a consequence of the design deficiencies in past papers, clear policy direction is impossible to ascertain from the published results. Despite the interesting group differences and similarities established by others, the extent to which these observations can be attributed to individual characteristics (i.e. hypothesised enduring cultural differences in learning preferences) and situational context (being dislocated from one’s familiar settings) remains to be established. For example, most culture and learning style studies are conducted in a Western context—comparing Western/local university students (who are in their home environment and on-shore) with international students (who are in an unfamiliar ‘foreign’ university environment). Hence, any observed group differences cannot be fully attributed to culturally-embodied learning styles within the individuals. Put bluntly, learning style researchers may just be over-attributing non-culture factors to culture. These non-cultural factors include the requirement to use a second language as the communication media, isolation from normal social support networks and the need to adapt to a distinctly different environment and establishing new contacts and networks.

Furthermore, even if the past observations of group differences are entirely due to distinct cultural learning styles, the suggestion that students or academics adapt, although well-meaning, is on its own neither useful nor practical. Even with institutional endorsement, ever-flexible learning/teaching strategies are not costless to learn and deploy. Moreover, since the policy-makers cannot predict the future mix of students’ cultural backgrounds and learning styles in their classroom, beyond some point, it is risky to alter styles on the basis of assuming the current cultural mix will stably prevail into the future.

The current research: Design and aims

The current study’s design includes three distinct groups of participants: local Australian students and two groups of Chinese students—one group enrolled at a university in China and another group enrolled at an Australian university. This design permits us to separately explore 1) whether students from the same culture display different learning preferences and styles a) when in their own cultural context and b) when out of their familiar language and environment; and 2) whether students from different cultures (in this context Chinese and Australian) do differ significantly when studying within in their culture of origin. This research is explicitly aimed at providing insight into the potential for educators to change their teaching style to accommodate the variety of students from diverse cultural groups.
comparing two Chinese groups, the current design also allows us to test the presumption that culture has an enduring effect on learning preferences regardless of setting.

The research instruments employed were developed with reference to Keefe’s (1979) definition of learning style as “cognitive, affective and physiological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment” (p. 4). From this perspective, individual approaches to learning tasks are thought to be “stable and pervasive characteristics” of the learner. As such, learning style is an interaction of behaviour and personality (Garger & Guild, 1984, p. 11).

Joy and Kolb (2009) have conceptualised the individual differences in approaches to learning as being based on an individual’s preference for combining the use of

1. Concrete experience (CE)—learning through experiencing and relating to the others;
2. Active experimentation (AE)—learning through doing;
3. Reflective observation (RO)—vicariously watching and reflecting; and
4. Abstract conceptualisation (AC)—learning through involving logical and systematic thinking.

Using Joy and Kolb’s framework to analyse the pedagogical nature of teaching modes, lectures involve reflective observation and abstract conceptualisation compared with tutorials whereas tutorials or workshops, including project work and group discussions, are characterised by more active learner engagement that typically utilise concrete experience and active experimentation. Starting from this perspective, it is plausible that these varying modes of teaching appeal to distinctly different student subtypes depending on their preferred learning style. Moreover, if learning styles are partly determined by culture (which as yet remains unestablished), then differing preferences for each learning mode (e.g. lectures, tutorials, etc) might be observed between Eastern and Western students. To this end, semi-structured interviews were used to obtain data.

Methods

The three cohorts of participants recruited were: Australian undergraduate students from three NSW universities (Group 1), Chinese undergraduate students who were studying in a range of universities in North China (Group 2), and Chinese students who had completed at least two years of university study in China, and had undertaken more than 6 months of study in Australia (Group 3).

Semi-structured email interview (Flick, 2009, p. 267) questions concerning learning style preferences were emailed to the participants in their native language (See Appendix). The content of the interview questions was “back translated” (Brislin, 1980) to ensure conformity and conceptual equivalence in the two languages. Two English–Chinese bilingual experts in the fields of education and linguistics were involved and back translation was compared until the consistent meanings were obtained. Email interview method was preferred over face-to-face for both ease of access (Chinese university students in China) and to enhance the potential number of participants (and thus generalisability). Within six months, 51 email interviews from group 1, 106 from group 2 and 16 from group 3 were received.

Data analysis involves both qualitative and quantitative methods. The interview transcriptions were analysed using three established procedures: open coding, axial coding and thematic coding. Open coding was employed to categorise and label data into meaningful segments. Axial coding was used to classify the links between these substantive categories. These data segments were then subdivided and structured according to emerging patterns,
relationships and themes (Flick, 2009, p. 307). Non-parametric quantitative analysis (chi-squared) of group differences in these codes and themes were undertaken in Microsoft Excel.

**Findings and discussions**

**Learning style preferences**

Table 1: Four categories of data emerged from the participants’ responses to learning style preferences.

<table>
<thead>
<tr>
<th>Participant groups (n)</th>
<th>Tutorial</th>
<th>Lecture</th>
<th>Both</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian students (51)</td>
<td>19 (37%)</td>
<td>16 (31%)</td>
<td>15 (30%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Chinese students in Australia (16)</td>
<td>6 (37.5%)</td>
<td>8 (50%)</td>
<td>2 (12.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Chinese students in China (106)</td>
<td>56 (53%)</td>
<td>45 (42%)</td>
<td>4 (4%)</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>

Although chi-squared analysis of students’ lecture or tutorial preferences revealed significant group differences ($\chi^2(8) = 22.7833$, $p < .001$)—with more Australian students indicating that their preference depends on situational context (e.g. who is lecturing or tutoring, and/or on what subject or topic) (30% vs 12.5% and 4%)—the effect size of this difference was very small (Cramer’s $V^2 = .012$). Among those giving a categorical preference for either tutorials or lectures, the modal response for Australian (37%) and Chinese students enrolled domestically (53%) was a preference for tutorials (see Table 1). However, among Chinese students in Australian universities, lectures were more preferred than tutorials (50% vs 37.5%). Hence, when in one’s own learning environment regardless of culture, students tend to prefer tutorials. However, when enrolled in a foreign learning environment, Chinese students appear to reverse their learning style preference. Despite this, the two Chinese groups did not differ significantly ($\chi^2(3) = 3.1286$, $p > .10$). This finding fails to support Joy and Kolb’s (2009, p. 83) view that “culture has significant affect in deciding a person’s preference for abstract conceptisation (learning through lectures) versus concrete experience (learning through tutorial).

Interestingly, approximately 6 times more Australian (Anglo-phone) than Chinese students reported their learning style preferences were situational or that both modes could be combined well (30% vs 5%). Although this might reflect actual differences in learning styles, it may also indicate that Chinese students were possibly more definitive in their responses to the questionnaire.

**Reasons for the preferred learning mode**

Participants were asked to give reasons for their preferred mode of learning. These were analysed separately according to whether the preference was for lectures (Table 2) and tutorials (Table 3).
Table 2: Reasons for preferring lectures.

<table>
<thead>
<tr>
<th>Participant Groups</th>
<th>Lecturer</th>
<th>Students</th>
<th>Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian students</td>
<td>Broad knowledge; easier to understand; more informative; thorough explanation</td>
<td>Be able to focus on listening and thinking; Don’t have to perform.</td>
<td>Intensive; less distractive method.</td>
</tr>
<tr>
<td>Chinese students (Australia)</td>
<td>Systematic knowledge</td>
<td>Comfortable to listen and take notes.</td>
<td>Efficient way of teaching and learning.</td>
</tr>
<tr>
<td>Chinese students (China)</td>
<td>Authoritative; Accurate; Systematic; detailed, well focused; In-depth.</td>
<td>Relaxed; Familiar; Learning more; Able to concentrate thinking</td>
<td>Efficient way of learning, Saving time; More focused; Classroom is controlled; Keep learning on the track.</td>
</tr>
</tbody>
</table>

Preference for lectures: Participants of all the three groups who preferred lectures offered three similar reasons for this preference. Firstly, they enjoyed lectures as a learning mode because they were less distracted by peers, and therefore they felt it was time efficient. Secondly, the students said they were comfortable in lecture because they were not interrupted by prompts to respond or requirements such as organising a talk or performance. Therefore they were able to relax and concentrate on listening and thinking during the lecture. Thirdly, they enjoyed lectures because they believed lecturers were knowledgeable and informative. However, subtle cross-cultural differences emerged. Chinese students in China were concerned more about the “authoritativeness”, “accurateness” and “in-depth” knowledge and felt lectures provided this. For the Chinese in Australia, receiving “systematic and organised” knowledge was an important reason for attending lectures. The Australian students seemed more interested in “broad” information and they felt that the lecturer usually could satisfy this expectation.

A textbook-based test-driven university system tends to have lecturers provide students accurate and authoritative knowledge for the exam purpose (Wong, 2004). This may explain the different reasons for preference between the two Chinese student groups.
Table 3: Reasons for preferring tutorials.

<table>
<thead>
<tr>
<th>Participant groups</th>
<th>Student’s role</th>
<th>Peers</th>
<th>Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian students</td>
<td>Individual receiving more attention; less intimidating and/or less embarrassing to ask questions; able to compare own learning to peers.</td>
<td>Peers as resource.</td>
<td>Specific problem-solving; the tutor more approachable; clarifying uncertainty; informal and intimate way.</td>
</tr>
<tr>
<td>Chinese students (Australia)</td>
<td>Like the light atmosphere; feel free.</td>
<td></td>
<td>More challenging.</td>
</tr>
<tr>
<td>Chinese students (China)</td>
<td>Active engagement of thinking; Relaxed; flexible; Opportunity to communicate and to be argumentative; make friends; feeling good to express.</td>
<td>Learning from peers; Sharing good ideas.</td>
<td>More challenging; More focusing on solving problems; Helping with creative thinking and ideas exchange; increasing students’ passion for learning new knowledge.</td>
</tr>
</tbody>
</table>

Preference for tutorials: Among those who preferred tutorials, common themes included: i) they enjoyed being given more attention as individuals; ii) they liked peers acting as mentors and they could learn from and share ideas with others, and iii) they enjoyed the light atmosphere; flexible learning pace and the focus on specific problem solving. However, there were some different views of tutorials between the three groups. Tutorials as “being less intimidating” and “more intimate” seemed to be more relevant to Australian students. For Chinese students in China tutorials encouraged active and creative thinking and students were allowed to express and exchange ideas which made this learning style preferable. Interestingly, an important reason that some Chinese participants (either in their home country or in Australia) preferred tutorials was because they were “more challenging”.

Tutorial participation

Given previous research has noted non-participation by Asian students in Western tutorials (Prasad, Mannes, Ahmed, Kaur & Griffiths, 2004), all the participants in this study were asked to reflect on their tutorial performance (see responses in Table 4).
Table 4: Tutorial performance.

<table>
<thead>
<tr>
<th>Participation in tutorials (n)</th>
<th>Mostly sit and listen</th>
<th>Actively involve</th>
<th>Both listen &amp; talk half/half</th>
<th>Subject and topic driven</th>
<th>Never had tutorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian students (51)</td>
<td>22 (43.1%)</td>
<td>14 (27.4%)</td>
<td>6 (11.7%)</td>
<td>9 (17.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Chinese students (Australia) (16)</td>
<td>8 (50%)</td>
<td>1 (6.3%)</td>
<td>6 (37.5%)</td>
<td>1 (6.3%)</td>
<td>0</td>
</tr>
<tr>
<td>Chinese students (China) (106)</td>
<td>33 (33.0%)</td>
<td>40 (40.0%)</td>
<td>22 (22.0%)</td>
<td>5 (5.0%)</td>
<td>6</td>
</tr>
</tbody>
</table>

Note: * - Excluded from subsequent analysis

Although chi-squared analysis of what students said they did in tutorials revealed significant group differences ($\chi^2 = 17.5207$, $p < .001$)—the effect size of this difference was very small (Cramer’s $V^2 = .01$). In contrast to stereotypical views, more Australian students ($22/51 = 43\%$) than the two Chinese groups (combined) ($41/116 = 35\%$) indicated that they just “sit and listen” in tutorials. This result is diametrically opposed to Charlesworth’s (2008) and others’ hypothesis of cultural difference and learning styles. However, between the two Chinese groups a significant difference emerged ($\chi^2 = 87.5238$, $p < .0001$)—the effect size of this difference was small (Cramer’s $V^2 = .108$)—50% of Chinese in Australia preferred to “sit and listen” (compared to 33% of Chinese in China). More importantly just 6% (1/16) of Chinese students in Australia responded that they were “actively involved” in tutorials (compared to 40% in China). These results contradict the notion of an enduring East-West difference in learning disposition. The results are more consistent with a dislocation effect—with Chinese in Australia differing most from the remaining two groups. In fact, Chinese students in homeland universities were statistically more likely than Australians ($27.4\%, CI_{95} [15.2\%:39.7\%] < 40\%$) to say they were actively involved in tutorials or both listen and talk ($11.7\%, CI_{95} [2.9\%:20.6\%] < 22\%$). Again Australian students were statistically more likely than Chinese to endorse “it depends” ($17.6\%, CI_{95} [7.2\%:28.1\%] > 5.2\%$).

**Tutorial preference and active involvement** The percentage of Chinese students in China who preferred tutorial is 53% but the active involvement rate is 38%; whereas 37% of Australian students preferred tutorials and 27% believed they were actively involved. Thirty-eight per cent of Chinese in Australia preferred tutorials however, only 6% (1/16) categorised himself/herself as an active attendee. The two groups in their home university have comparable rates in preference and activeness related to tutorials. Yet, the Chinese group recorded a higher rate for both tutorial preference and active involvement compared to the Australian group. The percentage gap between preference rate and active involvement rate for both groups indicates that students preferring tutorials is not equal to students being actively involved in tutorials. This finding implies that there are some students in both countries that valued and enjoyed being active in learning (Marlina, 2009). It aligns with the argument that difference and similarity “not only occurs within, but also between cultures” (Marlina, 2009, p. 241).

An important finding about the group of Chinese students in Australia is their activeness rate (6.3%) in tutorial is significantly low compared to its preference rate (37.5%); and this former rate is lower than that of the other two groups. Although Prasad, et al (2004)
suggest that international students are less likely to actively offer their ideas than their domestic peers in class for cultural reasons, their conclusion seems problematic when considering the evidence in Table 4 above. Here a difference is only observed in the Chinese students in Australia (not those studying in their home country). This result suggests that a novel learning environment and language, rather than enduring culture, contributes to the low activeness in tutorial. A further exploration focuses on how the participants feel when participating in tutorials.

Participants’ reflections on tutorials: The participants were asked to give a few words to describe what utmost concern (if any) they had about tutorials as a learning mode. The responses were coded and categorised into the following table (Table 5).

Table 5: The utmost concern about tutorials

<table>
<thead>
<tr>
<th>What may need to be overcome in tutorials</th>
<th>Australian students (51)</th>
<th>Chinese students (Australia) (16)</th>
<th>Chinese students (China) (106)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shy and no confidence to speak up;</td>
<td>25 (49.0%)</td>
<td>5 (31.2%)</td>
<td>11 (10.4%)</td>
</tr>
<tr>
<td>Lack of courage to talk to unfamiliar peers;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking of own idea inferior to others’ or judged negatively.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication and expression strategies;</td>
<td>2 (3.9%)</td>
<td>11 (68.8%)</td>
<td>57 (53.8%)</td>
</tr>
<tr>
<td>Convincing and argumentative language;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative and critical thinking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard to get a turn to talk;</td>
<td>13 (25.5%)</td>
<td>-</td>
<td>16 (15.1%)</td>
</tr>
<tr>
<td>Passive and quiet team members;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No patience to peers’ non-sense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tutors and time pace.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsure of expectation / no challenge.</td>
<td>8 (15.7%)</td>
<td>-</td>
<td>8 (7.5%)</td>
</tr>
<tr>
<td>Sufficient preparation for tutorials.</td>
<td>3 (5.9%)</td>
<td>-</td>
<td>14 (13.2%)</td>
</tr>
</tbody>
</table>

Chi-squared analysis of the data revealed significant group differences ($c^2 = 59.64, p < .001$)—the effect size of this difference was again very small ($\text{Cramer’s } V^2 = .031$). In direct contrast to the stereotypical cultural view, a smaller proportion of Chinese indicated that they felt emotions related to embarrassment when compared to Australian students ($16/(106 + 16) = 13.1\%$, CI$_{95}[7.1\%:19.1\%]$ vs 49%). Moreover, Australians tended to be more concerned of feelings of embarrassment even when compared to Chinese studying in Australia (49%, CI$_{95}[35.3\%:62.7\%]$ vs 31.2%).

Relative to Australians, Chinese students were more likely to indicate a lack of confidence in the content, insight or originality of their contribution ($68/(106+16) = 55.7\%$, CI$_{95}[46.9\%:64.6\%]$ vs 3.9%) as an impediment to tutorial participation. Comparisons between the two Chinese groups revealed a lower proportion of shyness (10% CI$_{95}[4.9\%:17.1\%]$ vs 31.2%) and concern over originality (54% CI$_{95}[44.3\%:63.3\%]$ vs 68.8%) among the Chinese in China. Thus, regardless of location of study, both Chinese groups reported feeling less concerned about shyness in class and more concerns about the originality of their ideas. The reader should hesitate before concluding that the latter finding is due to Chinese students’ concern that their ideas are inferior. In fact, the result might
equally reflect a ‘quiet confidence’ and not wanting to share this perceived advantage with others (see Ha Phan, 2011). Unfortunately, we did not gather the data needed to tease these possibilities out. Whatever the case, although this observed cultural difference is opposite to stereotypical expectations, it concurs with early findings (Marlina, 2009; Ryan & Louie, 2005).

Conclusion

This research explored the correlation of culture and learning style/preferences (lectures and tutorials) between Western (Australian) and Asian (Chinese) students in their home universities, and Asian students within Australia. The research failed to find significant differences in learning style preferences between the two groups who were studying in their home cultures—both preferring tutorial style learning for similar reasons. However, between the two Chinese groups, significant differences emerged in learning style/preferences and the reasons given for these preferences also differed. The current results imply that the past claims of enduring cultural differences in learning styles between Eastern and Western students may have been grossly over-stated. When the specific dislocation effects (changing from a familiar to an unfamiliar environment) are taken into consideration, apparent pervasive cultural effects dissipate. In fact, it is the dislocation effects rather than the cultural effects that appear to impact the most on participants’ learning styles. By extension, one can easily imagine Western students studying in a second-language in Asia displaying all the stereotypical Eastern student attributes (shy, quiet, reticent, etc). If correct, these results suggest policies aimed at assisting international students with their transition to a foreign country, rather than those that fundamentally alter the mode of education delivery, would be a more apt response to the needs of international students in Australian universities.

Limitations

Although the researchers carefully designed this research, limitations still exist. Firstly, the participants are from only two countries with three categories. Further research could investigate the role of cultural dimensions on students’ learning styles across a number of countries. Secondly, the sample of Chinese students studying in Australia is small compared to the other groups. A larger group of these participants may increase the validity of the research findings. Thirdly, data collection only involved e-mail interviews, which provided participant students’ perceptions on how they performed in lectures and/or tutorials. Future research could also include an observation method to increase the validity of the data. Finally although the back-translation method was employed to ensure uniformity of the interview questions, slightly different understandings of the same concepts between the two languages may still exist. These limitations can be addressed in future research.

References


Facilitating international education through overseas study programs: An Australian business school perspective

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Abstract: This paper explores how an overseas study program facilitates students’ international education exposure within an Australian business school context. We interviewed students after they had taken part in a three-week immersion program, involving visiting some of Europe and the UK’s principal financial and regulatory institutions. The report of their experiences provides critical insights into designing such programs with a view to achieving high levels of immersion. Participants in the overseas study program immersed themselves in the European way of living and became more tolerant and accepting of other cultures. We argue that as Australian universities remain strongly committed to providing an international education, short-term overseas programs are a key tool for achieving this strategic goal. There are a number of challenges universities are currently facing in implementing such programs. However, if Australian universities intend to maintain their position as high-ranking education providers within the Asia-Pacific region, they must continue to seek ways to deliver high-quality programs.

Keywords: study abroad; short-term programs; international education

Introduction

Overseas study programs have received extensive attention within the U.S., with most studies focusing on long-term programs spread over 12 to 16 weeks (DeDee & Stewart, 2003; Koskinen & Tossavainen, 2004). This paper explores how a shorter overseas study program, of two to three weeks, facilitates students’ international education exposure within an Australian business school context. We interviewed students after a three-week immersion program, involving visiting some of Europe and the UK’s main financial and regulatory institutions, and report on their experiences.

Research into international education within Australian tertiary education is rather fragmented, as studies are generally U.S.-based. In their corporate plans, most Australian universities are now highlighting the importance of internationalising the curriculum (Bell, 2004; Harman, 2004; Leask & Bridge, 2013; Rizvi & Walsh, 1998; Welch, 2002). Yet little guidance is provided in terms of achieving this target. Therefore, in this paper, we explore the following questions:

(1) How does a short-term overseas study program help students attending Australian universities acquire an international education? and

(2) How does the program design influence this process?

International education in Australia: A historical perspective

Tertiary education is currently Australia's foremost service export (Gallagher, & Garrett, 2012), a significant increase from its humble beginnings in 1949, when the implementation of the Colombo Plan (a federally funded initiative) sought to address this issue. In the post-war era, Australia was keen to establish working relationships with neighbouring south-east Asian countries. Hence, schemes inviting overseas students to study at Australian universities were introduced. By 1979, the Australian Federal Government had initiated sponsoring programs
inviting international students to study in Australia, granting them study visas against payment. In 1984, the Federal Government categorised education as an export industry, and as a result, the educational trade was born in Australia. Similarly with other countries such as the U.S. and the U.K., the full-cost fees policy was initially resisted in Parliament, but later became the financial lifeline of most institutions. The Bradley Report (a federally funded project issued in 2008 reporting on ways to draw students to tertiary education from different backgrounds) views Australia as a world leader in international education.

Australian universities focus on disseminating global perspectives, enabling the wider community to acquire international knowledge, develop new awareness from other cultures and subsequently acquire new ways of thinking. We argue that in contrast to the U.S. debate, there are two aspects to the Australian international education discussion: (i) the potential to attract international students from neighbouring countries, engaging them in similar programs to those offered to local students; and (ii) the ability to send local students overseas to be part of study programs.

This two-prong approach is set within a global context of interconnections and interdependence. The advent of the Internet has brought people closer, with political, cultural and economic systems being reported to worldwide audiences as events unfold. Our current environment links people to one another, demanding a better understanding of different cultures and the ways in which people live. The inference drawn from such changes is that international education is not merely a fashionable term coined by university business managers. It is an inevitable part of today's education endeavour. Internationalising education is critical, and its advancement and understanding is a global enterprise with no boundaries. Hence, Australian universities are required to nurture their students' awareness with respect to their intercultural context.

**Does international education mean different things to different people?**

The term *international education* is frequently used by educators, politicians and managers alike. But what does it really mean? Most importantly, can it be defined? In a seminal study, Arum and Van de Water (1992) recognised the need for a more specific and focused definition of international education. Researching the U.S. literature, they schematically described it as: (i) the need for universities to develop international curriculum content; (ii) academics and students being required to travel and expose themselves to international events with respect to training and research; and (iii) the ability of universities to team up with overseas institutions and co-operate in technical assistance and programs. Furthermore, Knight (1997) argued that internationalisation is the process of combining the international dimension within an institution's teaching and research objectives. *Internationalisation* and *international education* are used interchangeably, with the literature delineating no clear differences between their respective meanings. Both terms, however point towards an international dimension to the education curriculum within a global perspective.

De Wit (1993) analyses the Arum and Van de Water (1992) and Knight (1997) definitions and find them American-focused, with limited applications for educators in Australia. From a global perspective De Wit (1993) argues that international education is more institute-specific, and depends greatly on the university's vision to embrace a global perspective, treating all cultures equally. Such a process is argued to be developed via a bottom-up approach, with both academic and professional personnel making a conscious effort to internationalise the curriculum. De Wit makes no distinction between internationalisation and international education, and argues that it is a process whereby education embarks on an international trajectory. Ebuchi (1997) joins in the definition debate.
and argues that it is a process whereby the university's teaching and research becomes internationally and cross-culturally acceptable.

The Association of Universities and Colleges of Canada (hereafter, AUCC) noted in 2006 that there is no simple over-arching definition of international education. It consists of a number of activities, aimed at providing intensity to an educational experience within an environment encapsulating a global perspective. Researchers attempt to define international education within one overarching statement sometimes attempting to oversimplify the phenomenon (Toh, 2012). The feeling that there is no encompassing definition is a common sentiment amongst researchers and educators (Montrose, 2008). The formulation and implementation of internationalisation was originally a U.S. concept, attempting to strategically place educational institutions within a global perspective. This catch-all phrase for everything and anything international is not the ideal approach to this issue, and a more focused definition is required to address a university’s culture and its student cohort.

**Benefits of international education**

One way to analyse international education is to discuss its benefits: the anticipated consequences are global citizens with the ability to tap into different networks. The process enriches a student's social experiences, ultimately adding value to society. Lane and DiStefano (1992) argue that internationalisation is achieved only when a culture is understood, where the dialectic relationship between theory and practice is minimised as participants experience it first-hand. Dicken (1992) argues that the economic demand for worldwide labour and resources is satisfied through educational institutions. Hirst and Thompson (1996) move away from the economic agenda and argue that it is hard to put a monetary value on international education. Porth (1997) highlights the necessity for business students to learn more about other countries and markets through immersion. This newly acquired knowledge is a life-long experience, making students more employable than others who have not been exposed to this cultural experience. Marx (1999) and Cannon (2000) argue that immersion provides an opportunity for students to manage their own emotions and develop problem-solving skills whilst confronting new situations.

Spybey (1996) also discusses the benefits of international education, and finds it has broader ramifications than previously thought with new implications for business contacts. In addition, it is also clear that the exchange of students is key to a country's diplomatic efforts. Education is treated as a critical dimension in any country's foreign policy, as neighbouring countries in a geographic region are required to work together and develop healthy relationships, improving the country's image and setting policies in a favourable light (Alladin, 1992).

International education is encouraging universities to return to their roots; i.e., although there are national and language barriers, knowledge remains universal. It is this notion of converting knowledge to a commodity, manufactured, bought and sold, that facilitates the process of international education (Muller, 1995). The AUCC argues that the main reason behind the internationalising of universities is to increase the international and intercultural knowledge and students’ skills. Furthermore, the promotion of research addressing cultural, economical, environmental and political issues is also a key concern.

Universities are in a position to increase awareness and understanding of the issues affecting political, economic and cultural/multicultural developments within and among nations (Harari, 1992). Strategies like curriculum innovation, study abroad programs and student exchanges facilitate cross-cultural exposure, impacting significantly on the student and faculty experience. Montrose (2008) argues that there is a positive association between international education and quality education, and that both contribute towards heightening
the quality of higher education. Travelling overseas may initially be a cultural shock, with puzzling and threatening experiences, especially if the sojourner is on his/her first visit (Furnham & Bochner, 1986). However, Black and Mendenhall (1990) argue that sojourners are required to move beyond their culture shock and interact with people from different cultural backgrounds.

These studies point to the benefits students enjoy as a consequence of international education. However, the literature is not clear on how to structure and design programs to achieve such benefits. This lack of clarity is exacerbated in Australia as we argue there are two types of student cohorts to address; the local and the international who choose Australia for a holistic education experience.

**Australian universities and their international focus**

In a global world, employees are required to be more internationally focused (Lane & DiStefano, 1992). In a study of Australian business students’ and employer perceptions, Kavanagh and Drennan (2008) find that appreciation of cross-cultural diversity and cross-cultural communication skills are graduate attributes and skills considered essential to their career by students. Furthermore, employers prefer applicants with global experience (Davidson & Kinzel, 1995). In line with this, the International Association of Universities (1998) is unequivocally clear about the need for universities to be more internationally focused. Employers prefer applicants with global experience (Davidson & Kinzel, 1995) and an overseas study program is an example of how business schools are going global, forging stronger ties with industry (Porth, 1997). Such programs provide a traditional on-campus learning with experiential learning in an international setting. The combination of hands-on experience with cultural knowledge provides students with a framework for an initiation in cultural understanding. Although Porth (1997) acknowledges the benefits of a study program overseas, the positive experiences may be easily reversed by negative student experiences. Any type of experience affects a participant's perspective on cultural issues; it is the university's duty of care to ensure good experiences are provided.

The Organisation for Economic Co-operation and Development (OECD) believes that internationalisation is an important part of the education system that equips students with knowledge, skills and tools to stay competitive (OECD 2013). Open Universities Australia (2009) drafted a ten-point plan of action to determine an ongoing assessment process in evaluating universities' progress in providing an international understanding. The benefits of international education to Australia's national prosperity are classified into three main cohorts: (i) the Australian tertiary education; (ii) its students and graduates; and (iii) the wider Australian community - i.e. economic, trade, skilled migration benefits and particularly Australia's public diplomacy.

In addition, the Australian Business Dean’s Council (ABDC) in 2012 reported that resources are required to recognise the cultural and social knowledge needed to do business effectively. They argue that Australian managers are ranked poorly in terms of their adaptability, cross-cultural skills, language awareness, and leadership abilities, with limited exposure in the global market. More must be done to address these issues.

Australian universities have strategies in place for internationalising the teaching curriculum, with the establishment of offshore campuses, and twinning arrangements with overseas partners. Scholarships are funded from the Overseas Postgraduate Research Scholarship (OPRS), which offer specialised support to local and international students. Gniewosz et al (2002) reports a healthy increase in formal agreements between Australian universities offering international business degrees with overseas business schools. The
Group-of-8 (Go8) Australian universities explicitly include a policy of internationalisation in their mission statements as part of their corporate plan. This is where different state education policies congregate to a near-universal convergence: universities best serve their nations by serving the world of learning (Kerr, 1994). International student mobility is increasing, with students undertaking outgoing international study experiences away from their respective home campuses.

By way of summary of this overview of Australian universities’ approach to international education, it is reasonable to claim that institutions are strongly committed to this phenomenon. Such commitment is clearly evidenced, especially in the Go8 policies. However, it is a complex matter, and in this study a group of students (local and international) add to the debate concerning how a short-term program facilitates international education.

**Research design**

This study is founded on the constructivist-interpretive paradigm, with the intention of understanding “the world of human experience” (Cohen & Manion, 1994, p.36). Mertens (2005) suggest that individuals socially construct reality. The constructivist-interpretative researcher asserts that participants “make meaning” of a phenomenon or situation (Denzin & Lincoln, 2005). This implies a conception of reality as a multi-layered, interactive, shared social experience interpreted by the individual.

This paper investigates and evaluates the experiences of business graduate students from one of Australia's business schools participating in a European study program. The study examines the association between students' experiences abroad and their exposure to international education as interpreted by the students themselves. We invited students who participated in such short-term programs during the past three years (as we do not have access to students' records prior to 2009) to engage in semi-structured interviews.

Every year, a group of 35 students enrol in this elective unit where, besides the normal course work, a short-term overseas study program is embedded. In this study we mainly focus on the latter part, i.e. the overseas study program. Hence, our full sample consists of 105 participants and all were emailed, asking them to participate in this study. 31 accepted our invitation (29.52% response rate) to be interviewed. Table 1, panel A describes the participants’ demographic.
Table 1: Participants’ demographic

Panel A: Full sample of respondents

<table>
<thead>
<tr>
<th>Number of participants (N = 31)</th>
<th>Gender (%)</th>
<th>Local/ International student (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr 1 = 8</td>
<td>Male – 42.01</td>
<td>Local 33.82</td>
</tr>
<tr>
<td>Yr 2 = 10</td>
<td>Female – 57.99</td>
<td>Int. 66.18</td>
</tr>
<tr>
<td>Yr 3 = 13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B: Snap shot of the participants’ demographic representing transcripts recorded in this study

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Age bracket (yrs)</th>
<th>Current status</th>
<th>No. of yrs in Australia</th>
<th>No. of overseas trips outside Australia</th>
<th>Local/ International student</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>F</td>
<td>20-25</td>
<td>Working</td>
<td>2</td>
<td>1</td>
<td>Chinese</td>
</tr>
<tr>
<td>B</td>
<td>F</td>
<td>20-25</td>
<td>Working</td>
<td>N/A</td>
<td>None</td>
<td>Local</td>
</tr>
<tr>
<td>C</td>
<td>M</td>
<td>25-30</td>
<td>Working</td>
<td>N/A</td>
<td>1</td>
<td>Local</td>
</tr>
<tr>
<td>D</td>
<td>F</td>
<td>20-25</td>
<td>Working</td>
<td>N/A</td>
<td>3</td>
<td>Local</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
<td>30-35</td>
<td>Studying</td>
<td>3</td>
<td>3</td>
<td>Chinese</td>
</tr>
<tr>
<td>F</td>
<td>M</td>
<td>20-25</td>
<td>Gap year</td>
<td>N/A</td>
<td>None</td>
<td>Local</td>
</tr>
<tr>
<td>G</td>
<td>F</td>
<td>25-30</td>
<td>Studying</td>
<td>4</td>
<td>1</td>
<td>Vietnamese</td>
</tr>
<tr>
<td>H</td>
<td>F</td>
<td>20-25</td>
<td>Studying</td>
<td>2</td>
<td>1</td>
<td>Malaysian</td>
</tr>
<tr>
<td>I</td>
<td>M</td>
<td>20-25</td>
<td>Studying</td>
<td>3</td>
<td>5</td>
<td>Indonesian</td>
</tr>
</tbody>
</table>

No attempt has been made to link participants with the program year. This was done intentionally in order to preserve the students’ anonymity.

To avoid repetition and for reasons of space, we employ nine participants’ feedback and discuss their experiences. We could have included more participants’ comments, however we found a significant amount of duplication. Therefore, out of the 31 interviewees, this paper largely focuses on the anecdotes of nine participants that contributed to the salient points to our discussion surrounding the facilitation of international education. Furthermore, Panel B summarises the demographics of these nine participants. The snap shot of the sample consists of three participants representing the 2010 program, three from the following year, with the remaining from the 2012 program. The participants ranged in age from 20-35. All interviews were held on a one-to-one basis. No reference to their identity is supported in any way; full anonymity is wholly respected and each interview had an average duration of 25 minutes. Several years had passed for some participants since they participated. Nonetheless, we still sought to capture their view within the study to calibrate their long lasting impact/effect on the program. Furthermore, 67% of the interviewees are international students. This is a realistic representation of the current student cohort within Australian universities. As international students are already embedded within a ‘foreign country’ experiencing international education, this study is about how students attending Australian institutions may experience further levels of international education through a carefully designed short-term program in the UK and Europe. As the international cohort is overwhelmingly Asian, a European destination is still deemed to be an international destination for both local and international students.
Data collection and analysis

Following Allen (2009), Kim (2007) and Thorpe (1993), we structured our 31 interviews based on three factors: (i) the preparatory work every student underwent prior to travel; (ii) the three-week program; and (iii) an overview of the participants. The questions and topics we raised with the interviewees are discussed in more detail in the subsequent sub-sections. Each factor sought to establish the impact of the program on the participants’ experiences abroad and their exposure to international education as interpreted by the students themselves. Each participant prior to the interview was allocated with an alphanumeric code (Yr1A, Yr1B etc.), which was then translated to a letter (A, B, C etc.) of our choice. An independent person reviewed the coding of the transcripts to ensure rigorous and accurate analysis.

Each interview was recorded, transcribed and interpreted as a way of making more explicit use of the interviewees’ experiences. In addition, we also gathered a number of the participants’ everyday experiences before, during and after the program including conversations on our dedicated Facebook site. Overall, the interviewees were keen to share their experiences and the semi-structured interview approach facilitated the discussions.

Findings

We categorised students’ experiences based on their pre-academic work, the three-week sojourn and the participants themselves. This approach was chosen as we aimed to investigate the link between program design and international education experiences. Although the three factors are presented separately, they are all inter-related and contribute equally towards achieving high levels of international education via a short-term overseas program.

Preparatory academic work prior to travelling overseas

There is relatively little literature on the link between preparatory academic work and international education. Only recently, Poole and Davis (2006) and Allen (2009) have highlighted the importance of this crucial stage. The academic preparation involved prior to the program allows participants to better understand the environment they will be exposed to during their sojourn. The program requires participants to engage with readings regarding financial markets, international accounting standards and the European regulatory financial framework. The program is structured to grant levels of access to students not normally allowed to private citizens e.g. access to the OECD in Paris and the European Commission in Brussels, thereby providing an intensity leading to high levels of international education.

Initially, most students have their uncertainties about going overseas on the study program. There is the fear of the unknown, the monetary cost and being away from their families. The study program is certainly not a vacation; it involves significant academic preparation and also personal and professional commitment. The interviews raised an interesting feature, with Participants B and I voicing anxieties but also their eagerness to be travelling as a group.

*I have never travelled outside Australia and what a wonderful opportunity to be part of a group visiting the main European financial and accounting institutions. I do not think my parents would have approved of such a visit without
going through the itinerary of business visits and its academic content. But yes I was nervous and did not know anyone participating in the program (Participant B).

As an international student I am used to travelling but the attraction of being in a group experiencing a European life-style is what convinced me to ask my Dad to finance my expenses. I convinced my friend to join the program as I did not want to be alone, luckily she was also accepted but I was still worried if I would make new friends. I usually find it hard to make friends whilst on campus (Participant I).

Such feelings of insecurity are obviously a major stumbling block in a student’s endeavour to be internationally educated, and we sought ways to address this issue by organising group briefing sessions, meet-ups and pre-departure barbeques. Our dedicated Facebook site also assisted with students getting to know each other and discussing pre-departure travel tips. Comments/questions on the Facebook site prior to departure included the following:

1) Hi everyone, great to see so many of you join our group so quickly! – 5 degrees Celsius in Paris and -10 in Interlaken. Make sure you pack your thermals, scarf, gloves and warm coat! 2) Are any immunisations required for Europe? 3) Can we include footnotes or does it have to be Harvard referencing for the pre-departure assignment? 4) Does anyone know how to translate German? 90% of the documents I need before we leave are in German? 5) 14 days to go heaps of snow exciting! 6) We will be distributing tickets in 2 weeks’ time. Stay tuned for more announcements on FB. 7) Hey, quick question – when we are visiting the financial institutions, will we be required to wear formal business attire at all times? e.g. suit? Just trying to work out my packing. 8) Do we need to print out the lecture notes before we leave? 9) Can I sit the final exam in Kuala Lumpur when I return or does it have to be Australia? 10) Do we have a spare day in Prato or can we go to Pisa? 11) Hi guys, make sure you keep your receipts in Europe as you can claim them back the VAT tax at the airport. 12) Going to be in Rome the day before everyone arrives. If anyone else is there a day early, please send me a message. 13) If we are required to provide credit card details upon check-in, as a charge against the room, what if we don’t have a credit card? Will this be a problem? 14) With hand-held luggage, are backpacks included as the one item we can carry on board? Because some handbags are bigger than my backpack . . . and they aren’t considered hand-held luggage.

From an academic perspective, we developed group assignments to encourage students to work in groups. We randomly allocated them into groups, which resulted in the benefit of a diverse group based on culture, age, gender and work experience. Their task was to develop an intelligence report on the business organisations we were visiting overseas. The students’ interaction and preparatory work allowed them to become more knowledgeable and also provided an opportunity to practice public speaking. Participant D, a local student who had travelled extensively and was in employment remarked as follows:

The week-long intensive coursework and preparatory research we were instructed to do was not something I looked forward to. Attending Uni during December when most of my mates are out and about was not a pleasant feeling but it became clear as we continued on our business visits how important this phase is. It gives you that
insight into the business visits, their profile and role within the economy (Participant D).

We strongly feel that this is an integral part of the course design for immersing students and working towards achieving high levels of international education. We also allocated 15% of the total assessment criteria to student participation in the intensive preparatory course to encourage student interaction and involvement.

**The three-week program**

It is a fascinating experience to watch participants evolve both socially and culturally throughout the three-week sojourn, as they observe how locals work, commute and live in the main European cities. Comments such as the following were common in the interviews:

*The smells from the open markets, the crowds around you, I think I sensed the experience with all my senses.* (Participant A)

*The first train we boarded from Rome to Milan was the start of a very exciting feeling. The ability to hop onto a train and travel around Europe is something I will never forget.* (Participant G)

*All I can say is that the program left me with an impression that will help me foster a feeling of openness and understanding of how different we are and will keep this in mind whilst at my place of work.* (Participant B)

We notice the students’ attitudes and opinions start to form as we travel from one country to another, visiting banks, regulatory authorities and accounting standard setters, small businesses and universities. Participants observe commonalities and differences across countries and their respective organisations. Everyone is interested to learn more, to better understand the world we live in. The program eventually immerses the participants within the European way of living, encouraging the participants to be more tolerant and accepting of other cultures.

The visits to financial institutions/regulatory authorities and accounting standards setters are the obvious highlight of the program. The insights and viewpoints presented to them by the host speakers of the respective organisations provide an edge to the international education process. The theoretical aspects of the course are learnt by undertaking the required coursework; but the practical insights being spelled out by practitioners and experts in the field is what makes such activities so distinct. The interviewees clearly acknowledge this phenomenon:

*I would have never dreamt to sit in the boardroom of the Swiss National Bank and engage in a conversation with one of the key senior economists to the Swiss government on the forecasted inflation rates and their impact on exchange rates.* (Participant C)

*The European Union structure has always intrigued me and being of Italian origin I have always been curious to learn more. I found the presentation given to us by one of the Commissioners interesting and his perspective on the future of the EU was quite thought provoking.* (Participant F)
As an accounting student, my understanding on the implementation of international accounting standards strengthened as a result of visiting the standards setters in London. Indeed there are numerous benefits for global accounting standards although reality is that diverse standards will continue to exist. (Participant H)

The selection of the business visits is an extremely crucial aspect of the international education process. It is not only about access to the building/infrastructure of the key European organisations, but also about tapping into the host presenter's mind and being able to ask ad hoc questions whilst gaining insights to future policies. Of course, the business visits are also selected to fit in with the course curriculum. Numerous preparatory emails would be exchanged between the university and the business organisation to ensure that the organisation was cognizant with the course objectives and background of the students. One of the advantages of a European study program is being exposed to the European institutional framework, with all the organisations, regulatory authorities and other agencies. This is another step towards international education, as one of the realities of living and studying in Australia is the limited exposure to the Euro-debt crisis and the daily events unfolding as a result of the crisis. Throughout the three-week sojourn, students experience first-hand what the Europeans are going through in terms of the financial crisis. As the financial crisis deepens, and governments are attempting to minimise the risk of contagion to other markets, students are becoming more engaged. It is no longer a problem contained within their textbooks. It is a real problem that they read about and listen to on the local media, increasing the intensity of their overseas experience.

Another aspect connected with the course structure and program design is the participants' exposure to non-profit organisations (NPO). We live in a world where NPOs like the OECD in Paris, Bank for International Settlements in Basel Switzerland, and the UN Food and Agriculture Organisation in Rome are structured to help and assist the community at large. With such organisations on our business visit list, it is clear from the interviews that the students find these visits an eye-opening experience:

*I never considered working for NPOs. It simply did not click, but visiting these organisations made me aware of their employment possibilities and the work that I could be possibly doing for society at large.* (Participant E)

*Being a business student we are constantly being reminded of the importance of going concerns and profitable ventures but we never stop and think about social costs and the impact of programs on the wider community. NPOs is something I will keep an eye on in terms of career opportunities.* (Participant H)

The three-week sojourn is only one factor helping the participants achieve their international education experiences. We contend that the combined effect of the three factors facilitate this process, with the following being the last.
The participants

The participants’ heterogeneity causes them to experience different intensities of international education depending on their values. Participants quickly find out that the people around them have different value systems. A female local student with no overseas trip exposure and with working experience revealed the following:

The program exposes you to a number of places and experiences where you are dealing with strange situations you do not see every day. My current view on multiculturalism and cross-education is now more intense, accepting people for who they are and deal with them accordingly. (Participant B)

The participants’ language ability affects their level of immersion whilst on the program. Students, conversant in either Italian, French or German, are able to further immerse themselves within the host cultures. Participants often comment that the brief informal one-on-one conversations with small business owners like a local boulangerie in Paris, or an open-air stall owner in Rome empowers them with the ability to use a second language to communicate. Their language ability enables participants to speak to the host people in their own language. Others with no knowledge of a second language may feel frustrated and possibly isolated. Body language generally takes over and becomes a language of communication, with smiles and gestures following. This is often the case when students are communicating individually outside of the group.

Such experiences foster openness, with the participants noticing commonality within a multicultural context. The awareness of different cultures increases as the program progresses. Well-travelled participants are less susceptible to such notions as their experience takes over. Participants connect their travel to the international education process, whilst submerged in the European experience, sensing commonality and uniqueness. The ability to move easily from one country to another and compare experiences or perceptions is one of the advantages of such study programs. Some participants are frustrated because of the short time they spend in each of the European counties and express a strong desire to stay longer. Such are the challenges involved with short-term sojourns; hence, the program design and sequence of business visits is crucial. The more mature participants like Participant E (a female international student with extensive experience of overseas trips) openly acknowledged the program’s benefits, as is documented in our interviews:

As a result of the business visits, my feelings and attitudes increased as I travelled. My knowledge base increased and as a result I feel more confident talking about the financial crisis and the general economy. It is an attitude I take with me at work. Global education is not only about theory but about attitudes you develop through your experiences. (Participant E)

The issue of gender imbalance in terms of job opportunities is a common topic that arises amongst the participants whilst on the program. When visiting organisations and institutions, participants realise that females are occupying key positions within the executive hierarchy:

The host presenters at Banca Intesa in Milan and at the European Commission in Brussels were both women. This inspires me as a female as very often we are led
to believe that there are limits as to how high a female may climb the corporate ladder. What is not clear though is what type of work-life balance these people have. (Participant D)

In my culture back in Vietnam, women seem to be given less opportunities. It is nice to see women being given the opportunity in these organisations. (Participant G)

These experiences whilst on the study program generally provide life-long memories. Students are glad to describe what they did whilst being in Europe and how it affected their attitudes:

The program gave me confidence and credibility. I now feel more assertive and I returned home with a new understanding about the global economy. My focus is more intensified and it made a difference in my personality. (Participant C)

My overriding comment is that I learnt more about Australia travelling to other countries than I would in any other place. We take everything for granted here (i.e., in Australia) what we saw and experienced opened my eyes. (Participant B)

Overall, travel is a way to learn about global perspectives. It is a self-learning process, irrespective of whether you are a local or international student, as students constantly compare what they see with their own practices. They learn more about their own country whilst travelling and any exposure to other cultures is going to increase one's tolerance, irrespective whether they agree or disagree with what they see. One aspect of the study program that consistently occurs is its ability to bring participants together, sharing their experiences and viewpoints on several issues even if unrelated to the study program. These same students generally would not engage on-campus as they did on the program. The objective of bringing people together to talk to each other, and as a result be more tolerant of each other, is therefore achieved.

Discussion and conclusion

Internationalising the curriculum, is a necessary component towards the preparation of graduates that possess a broad range of skills in preparation for today’s workforce (OECD, 2012; ABDC, 2012; the International Association of Universities, 1998; Universities Australia, 1998). Students also appreciate cross-cultural diversity and cross-cultural communication skills as essential skills for graduates (Kavanagh & Drennan 2008). The process of internationalising the curriculum can include activities such as curriculum innovation, study abroad programs and student exchange programs. This study explores students’ experiences regarding international education after participating in a short-term international study program. We also evaluate how the program design may affect their immersion in such a program.

In terms of program design, we find that preparatory meetings and course work, the business visit selection, and the quality of host speakers has a significant effect on students’ international awareness. The importance of preparatory meetings and course work has already been established in the literature (Allen, 2009; Poole & Davis 2006). Regarding student experiences, we find that the magnitude of changes the participants experienced depended on their international, global and intercultural perspectives. Participants that
identified themselves as significantly different to the host culture generally experienced a high degree of psychological intensity (Furnham & Bochner, 1986). Significant differences in terms of beliefs, attitudes and communication styles contributed towards increased intercultural immersion.

A common trend throughout the interviews was that participants who shared common physical traits with the host people had an increased sense of acceptance. The identification and association with a certain racial or ethnic background provided our participants with an increased sense of belonging to the host culture. In contrast, individual participants who did not experience this similarity tried to understand how it related to their own culture.

The program design provided a mixed bag of immersion experiences. The lack of any European host language obviously prevented some cross-cultural interactions. However, the program does allow participants to experience an increase in immersion in the host culture during their free time from the program activities (Hackey, Boggs, & Borozan, 2012). Cultural immersion does have significant benefits including a life-long value of cultural differences. An understanding of these differences can be a distinguishing characteristic of successful graduates (Porth, 1997).

Overall, the program design grants our participants’ access to a number of keynote speakers that are experts in their field. This international exposure to leaders in their respective disciplines allows the participants to gain accurate and updated information. We also argue that unfortunately the prearranged program design of planned accommodations, whilst convenient for the participants, limits the immersion experience. However, for the well-travelled participants, the combination of the business visits and the main European landmarks are an excellent opportunity to immerse themselves within the European way of living.

On a gender issue, we noted that female participants in the program found an increased awareness of women's capability within the workforce. On several occasions throughout the business visits, the host speakers are females occupying senior executive roles within the organisations. This came as a surprise to some participants, and possibly served as a source of inspiration for them to achieve similar positions in their own countries.

We argue that there are a number of challenges ahead for Australian universities in developing short-term study programs. Tertiary education is currently our main service export and Australia continues to be one of the main education providers within the Asia-Pacific region (Gallagher & Garrett, 2012). Universities have a moral and ethical obligation to deliver high-quality programs to both local and international students (De Wit, 1993). One of the main issues relates to the choice of geographic location to host the study tour. Further research is required to identify which region or combination of regions delivers the deepest immersion for fostering international education. There are financial constraints in developing such programs, and the overseas study program costs are an additional cost to the participants besides the normal course fees. As different universities have different priorities, their overseas study programs should reflect their values and principles. Australian universities have established offshore campuses and twinning arrangements with overseas partners in an effort to internationalise their teaching curriculum. Amidst all the complex issues Australian universities face in implementing an international agenda, they remain strongly committed to this phenomenon. Irrespective of any approach put forward, an overseas study program will always deliver a degree of international education to all the participants involved.

References


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On the relationship between self-regulation strategies and mindfulness: A study of Iranian high school EFL students

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Abstract: Educational scholars have increasingly concentrated on the role of self-regulation strategies on students' academic achievement. Among various individual characteristics influencing students' self-regulation, mindfulness has received notable attention. Accordingly, this study sought to explore whether Iranian EFL students' mindfulness accounts for their self-regulation strategies. Approaching 204 English students, data were collected through "Five Facet Mindfulness" and "Motivated Strategy for Learning Questionnaire". The results confirmed that EFL students' mindfulness was a positive predictor of their self-regulation. It was also concluded that high mindfulness in EFL students could contribute to high self-regulation, which, in turn, affects students' learning and help them achieve their educational purposes. Furthermore, it was found that students' self-regulation and mindfulness strategies were not statistically correlated by their gender differences.

Keywords: mindfulness; self-regulation; academic achievement; learning strategies; awareness

Introduction

As the worldwide demand for learning English as a foreign language has been dramatically increased, the role of language learner as a key element in the learning processes has been progressively heightened. Accordingly, it is right to assert that attempts to facilitate and develop language learning processes will never succeed unless language learners are affectively and cognitively taken into account. It is also assumed that EFL students' performance is affected by their state of mind, thoughts and emotions (Brown, Ryan, & Creswell, 2007; Hillgaar, 2011; Pintrich & DeGroot, 1990; Roesser & Peck, 2009). Among various individual characteristics believed to influence learners' language development, many educational researchers and psychologists thought that, self-regulation and mindfulness strategies play a significant role (Brausch, 2011; Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Hillgaar, 2011; Pintrich & DeGroot, 1990, 2000; Shapiro, Oman, Thoresen, & Plante, 2007; Zimmerman, 2000). Throughout the previous decades, these two concepts have been separately investigated in different domains such as medical education, psychological, physical health, sport and addiction (Kabat-Zinn, 2006; Hillgaar, 2011; Roesser & Peck, 2009; Sandars & Cleary, 2011; Shapiro, Carlson, & Astin, 2006). There is wealth of information regarding the role of self-regulation in students' academic achievement both theoretically and methodologically (Kareshki, 2011; Nami, Enayati & Ashori, 2012; Ozan, Gundogdu, Bay, & Celkan, 2012; Pintrich, & DeGroot 1990, 2000; Zimmerman, 2000). Concerning the role of mindfulness in educational context particularly in English as a Foreign Language, however, there are few, if any, relevant empirical works. Moreover, although there is theoretically sufficient research on the relationship between self-regulation and mindfulness, however, methodologically the link between these two conceptions has been rarely touched on in educational context particularly in EFL setting. Therefore, the current study endeavoured to investigate the association between EFL students' self-regulation and mindfulness in Iranian context.
Theoretical framework

According to Pintrich, & DeGroot (1990) the Motivated Strategy Learning Scale was designed using a social-cognitive theory of motivation and self-regulated learning. As self-regulating is best characterised as being cognitively, meta-cognitively, motivationally and behaviourally active in learning process and accomplishing the target goals (Eccles & Wigfield, 2002; Pintrich, & DeGroot, 1990), motivation is associated directly to the self-regulating. It is conceptualised that these two concepts could not be seen as students’ personality trait, however, motivation is context specific which can alter from course to course and self-regulation can differ in terms of nature of the context and the course. This scale consists of five sub-scales, namely, self-efficacy, intrinsic motivation, test anxiety, cognitive strategy use and meta-cognitive strategy use and management efforts.

To measure EFL students’ self-regulation strategies, the current study adopted Pintrich, Smith, Garcia, and McKeachie (1991) perspectives on self-regulation. The authors believed that this theory approaches students both affectively and cognitively in a sense that individuals are considering as a whole person.

Mindfulness emerged from Buddhist spiritual practice and is perceived to alleviate through meditation and nurture (Kabat-Zinn, 1990). It is progressively accomplished and adjusted as a part of different therapeutic treatments from two distinguished treatments, namely, Mindfulness-Based Stress Reduction (MBSR) and Mindfulness Based Cognitive Therapy (MBCT). Mindfulness is defined as being aware of the experiences and observing them while happening without appraising their goodness or badness (Kabat-Zinn, 2006). It means that thoughts and emotions are just viewed as passing mental events, rather than to be involved, scrutinised or reflected over (Kabat-Zinn, 2006). According to Bishop et al. (2004), mindfulness includes two key components: the first mechanism includes self-regulation of attention so as to maintain the immediate experience to augment the recognition of mental events in the present moment and the second mechanism contains implementing a particular direction towards one’s experiences in the present moment which conceptualised by desiring to know, openness, and acquiescence.

Taking all aforementioned discussion about mindfulness, Bear, Smith, Hopkins, Kriitemeyer, and Toney (2006) established a mindfulness scale on the basis of these conceptualisations, adding some facets to make it more comprehensive. Observing (noticing the external and internal events), describing (expressing internal experiences, emotions and thoughts), awareness (being conscience towards events), non-judging (non-evaluative attitudes towards experiences) and non-reactivity (permitting thoughts and feelings commute) are components of mindfulness. Congruent to the target objectives of the present research and following the thorough and comprehensive conceptualisations and theories behind mindfulness, the researchers applied this scale in the current study.

Review of literature

Many educational researchers stated that students’ performance and achievement is affected by their self-regulation (Bowlin & Bower, 2012; Ching, 2002; Feltman, Robins & Ode 2009; Hillgaar, 2011; Ozan, Gundogdu, Bay, & Celkan, 2012; Pintrich, & DeGroot 1990; Zimmerman, 2000). It is also believed that due to its contribution to the academic achievements, self-regulation of cognition and behavior is one of the most important aspects of students’ learning processes (Ching, 2002; Heikkila, Niemivirta, Nieminen & Lonka, 2011; Kitsantas, Winsler & Huie, 2008; Lemos, 1999; Pintrich 1990; Ozan, Gundogdu, Bay, & Celkan, 2012; Zimmerman, 2000). In this relation, dispositional self-regulation has been characterised as students’ active and effective engagement in their own learning processes.
through establishing, managing, monitoring and adjusting the behavioural and cognitive environmental resources to accomplish the desirable learning and academic objectives (Pintrich, & DeGroot 1990, 2000; Zimmerman, 2000). Students who are high in dispositional self-regulation incline to be more self-disciplined, self-directive, and self-implemented in setting their goals (Pintrich, & DeGroot 1990; Zimmerman, 2000).

Moreover, it is assumed that self-regulation activities can mediate the connections between students and the context, as well as their students’ overall achievement (Zimmerman, 2000). Hrbackova and Hladik (2011) conducted a study to investigate the relationship between college students’ self-regulation and their academic achievement in China. The results revealed that students’ academic achievement was positively correlated with students’ self-efficacy, intrinsic value and cognitive strategy use and negatively correlated with test anxiety. This study shares commonalities with such researchers as Ching, (2002), Pintrich and DeGroot (1990) and Zimmerman, Bonner, and Kovach (2006), in that they found that the subscales of self-regulation support their main scale and that the self-regulation improved students’ academic performance.

In the same vein, Iranian researchers had a good contribution to the related literature (Kareshki, 2011; Nami, Enayati & Ashori, 2012; Samadi & Davaii, 2012; Sedaghat, Abedin, Hejazi & Hassanabadi, 2011). For instance, in a more recent study, Samadi and Davaii (2012) found a significant relationship between female students’ self-regulation and academic achievement in Tehran middle school. This study suggests that applying more cognitive and meta-cognitive strategies and managing the time and energy has extensively significant contribution to more academic performance. Like the former research, this study has heightened the significant role that self-regulation plays in academic performance.

Another factor, which is supposed to influence students' academic achievement is dispositional mindfulness. Mindfulness has been theorised as encouraging the well-being of individuals by cultivating the well-being experiences and also by facilitating self-regulating health behaviour, which contains greater attention to individual needs and values (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007). Moreover, it is perceived that mindfulness reduces negative feeling, thought, anxiety and avoidance behaviour (Shapiro, Oman, Thoresen, & Plante, 2007) and simultaneously, promotes health and emotional tolerance for negative emotions and experiences (Baer, 2003; Breslin, Zack, & McMain, 2002; Kabat-Zinn, 2003).

Review of the related literature revealed that mindfulness was investigated from different perspectives. It was first introduced as a therapeutic treatment to reduce the stress and pain and increase individuals' psychological well-being (Kabat-Zinn, 1990, 2006; Hillgaar, 2011). Then, it was applied as a useful and practical phenomenon in other domains such as physical health, sport, addiction and educational context (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Franco, Mañas, Cangas, & Gallego, 2010; Spadaro, 2008). By providing the necessary attention and awareness to the present goals and experiences as well as increasing the psychological well-being of students, mindfulness contributes to effective learning and therefore, attaining the educational objectives (Brausch, 2011; Franco, Mañas, Cangas, & Gallego, 2010; Hillgaar, 2011; Napoli, Krecz, & Holley, 2005; Roser & Peck, 2009; Saltzman, 2011). In one study, Franco, Mañas, Cangas, and Gallego (2010) attempted to investigate the role of mindfulness on secondary school students' academic performance and anxiety in Spain. They found a significant positive relationship between students' mindfulness and academic success as well as a negative association between mindfulness and anxiety.

Taking the above-mentioned discussion about self-regulation and mindfulness into account, it is obvious that each of these concepts separately plays a vital role in students' academic achievement. Therefore, it seems necessary to address the relationship between
these two properties and explore their probable joint impact on students' educational achievement. In the following paragraphs, the relevant literatures concerning the links between these two scales are reviewed.

Reviewing the previous research revealed that the link between these two concepts was addressed in different domains. Moreover, theoretically, mindfulness and self-regulation strategies are related to each other in a sense that increasing the level of mindfulness can improve individuals' self-regulation strategies (Brausch, 2011; Brown, Ryan, & Creswell, 2007; Masicampo & Baumeister, 2008; Zimmerman, 2000). In particular, Masicampo and Baumeister (2008) touched on the issue and explained how mindfulness could increase self-regulation in individuals. They proposed that mindfulness increases the attention to the present moment and well-being of mind by inhibiting and eliminating the intrusive thoughts. In other words, upsurge in individuals' attention and well-being as well as a dearth of unwanted thoughts contribute to focusing on goals, which leads to self-regulation skills. According to Bishop et al. (2004), mindfulness requires self-regulation and concentrating of attention to the present moment. Likewise, different scholars attempted to approach this issue and use it in different domains methodologically (Brown & Ryan, 2003; Hillgaar, 2011; Kee & Wang, 2008; Spadaro, 2008). In a more recent study, Hillgaar (2011) found a positive relationship between Norwegian students' self-regulation and their mindfulness. The students who were more mindful represented higher self-regulation strategies in their learning processes. Thus, it might show the significant role of mindfulness in educational context as it helps students augment their learning through more attention and awareness to their previous experiences. In Iranian context, Beshart and Parto (2011) investigated the role of self-regulation as a mediator between students' mindfulness and psychological well-being. The results revealed that self-regulation strategies, as a mediator, play a central role between mindfulness and psychological well-being. One conclusion that can be drawn from the research in this realm is that mindfulness improves psychological well-being by encouraging cognitive processes such as attention control to external and internal experiences, decreasing meditation, ameliorating mindful awareness, executive cognition and working memory (Chambers et al., 2008).

Although many scholars contended that EFL students' self-regulation and mindfulness are affected by individual factors such as gender and there is a wealth literature which supports this claim, it is difficult to draw conclusions regarding the link between mindfulness and self-regulation with gender as the research findings have been inconsistent. For example, while some researches have revealed a significant link between gender and these two individual properties (Akgun & Ciarrochi, 2003; Bidjerano, 2005; Kitsantas, Winsler & Huie, 2008; Ozan, Gundogdu, Bay, & Celkan, 2012; Peklaj & Pecjak, 2002) others have found no significant association (Bowlin & Bower, 2012; Fettahlioglou 2011; Pajares & Graham, 1999). To partially recompense for such inconsistency, the current study was carried out to empirically address this issue.
Statement of the problem

Although, self-regulation and mindfulness have been studied separately in different domains such as medical education, psychological well-being and sport, the interaction between these two concepts were rarely tackled in educational context in general and in learning English as a Foreign Language in particular. Regarding the aforementioned discussion about the role of each of these two issues as the utmost elements on EFL students' performance, studying the link between these learner variables seems sensible. Moreover, although, theoretically the relationship between these two concepts was well defended, methodologically, this issue has rarely been touched on inclusively. Review of the related literature also revealed contradictory findings concerning the relationship between EFL students' self-regulation and mindfulness with regard to gender differences. Furthermore, the researchers could not find any relevant study about EFL in Iranian context. Consequently, to touch this issue in EFL context, the authors attempted to bring the issue under the focus and fill the existing gap by addressing the following research questions:

1. Does mindfulness account for significant variance in English EFL students' self-regulation strategies?
2. Is there a significant relationship between EFL students' self-regulation strategies and mindfulness with reference to gender?

Methodology

Participants

The sample comprised a group of 204 junior and senior high school students in Babolsar and Ilam cities, Iran, of whom 109 (47.7%) were males and 95 (52.4%) were females, whose age range was 17 to 20. As shown in Table 1, of the participants, 82 (40.1%) studied Humanities, 61 (29.9%) Sciences, 40 (19.9%) Mathematic and 21 (10.2%) other fields of studies. It is important to note that participation was completely voluntary and the responses were anonymous.

Table 1: Demographic characteristics of the participants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>109</td>
<td>47.6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>95</td>
<td>52.4</td>
</tr>
<tr>
<td>Field of study</td>
<td>Humanities</td>
<td>82</td>
<td>40.1</td>
</tr>
<tr>
<td></td>
<td>Sciences</td>
<td>61</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>40</td>
<td>19.6</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>21</td>
<td>10.2</td>
</tr>
</tbody>
</table>
In this study, two scales were applied to collect the data: Motivated Strategy for Learning Scale and Five Facets Mindfulness Scale. These two scales were first translated into Persian and adjusted to our participants' social and cultural situation. Then, they were piloted on 25 volunteers, and accordingly the necessary modifications were made to the unclear items.

**Motivated Strategy for Learning Scale (MSLS)**

Motivated Strategy for Learning Scale developed by Pintrich et al (1991) was employed to assess EFL students' self-regulation. Items of the scale were structured to express five dimensions of self-regulation: Cognitive strategy use, meta-cognitive strategy use and management of efforts, self-efficacy, intrinsic values and test anxiety. The 44 items on the MSLS are scored on a 5-point Likert scale format with labels from 1 (strongly agree) to 5 (strongly disagree). Furthermore, Pintrich et al (1991) reported a reliability of $\alpha=.80$ and a reasonable validity for MSL scales.

**Five Facets Mindfulness Scale (FFMS)**

Five Facet Mindfulness Scale designed by Bear et al. (2006) was applied to measure the extent of Mindfulness in students. Items of the scale were constructed to represent five areas of mindfulness namely: describing, non-judgmental, observing, awareness, and non-reactivity. FFMS consisted of 39 items rated on a 5-point Likert scale format with labels from 1 (strongly agree) to 5 (strongly disagree). The reliability of mindfulness scale was $\alpha=.87$. Moreover, Baer et al. (2008) carried out a study to assess the validity of the five-facet structure. The results of a confirmatory factor analysis indicated that five facets mindfulness fit the data well.

**Procedures and data analysis**

All participants were invited to attend the study in spring, 2013. Accordingly, the scales were administered among them in different high schools in Babolsar and Ilam cities. In general, it took more than one month to collect all the questionnaires. Consequently, to respond the research questions of the study, the collected data were put into the Statistical Software for Social Sciences (SPSS.20). The Spearmen correlation was run to determine the relationship between students’ self-regulation strategies and mindfulness as well as the association between EFL students' self-regulation strategies and mindfulness in terms of their gender differences. Moreover, linear regression was applied to see the extent to which EFL students' mindfulness predicts their self-regulation. In the following section, the findings are illustrated at length.

**Results**

To examine the relationship between the main and sub-scales of the present study, Spearman bivariate correlations were computed, the result of which is presented in Table 2.
Table 2: Correlations between EFL students' self-regulation strategies and mindfulness facets.

<table>
<thead>
<tr>
<th>Students' self-regulation</th>
<th>SR</th>
<th>CSU</th>
<th>MME</th>
<th>SE</th>
<th>IV</th>
<th>TA</th>
<th>M</th>
<th>D</th>
<th>NJ</th>
<th>O</th>
<th>A</th>
<th>NR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive strategy use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meta-cognitive and management efforts</td>
<td>.773*</td>
<td>.175*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.468*</td>
<td>.517*</td>
<td>.188*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic values</td>
<td>.548*</td>
<td>.643*</td>
<td>.196*</td>
<td>.680*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.154*</td>
<td>.060</td>
<td>.257*</td>
<td>.116</td>
<td>.066</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students' Mindfulness</td>
<td>.391*</td>
<td>.314*</td>
<td>.382*</td>
<td>.150*</td>
<td>.187*</td>
<td>.330*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describing</td>
<td>.215*</td>
<td>.176*</td>
<td>.205*</td>
<td>.070</td>
<td>.118</td>
<td>.134</td>
<td>.568*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-judgmental</td>
<td>.309*</td>
<td>.286*</td>
<td>.239*</td>
<td>.154*</td>
<td>.223*</td>
<td>.184*</td>
<td>.689*</td>
<td>.215*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observing</td>
<td>.405*</td>
<td>.176*</td>
<td>.143*</td>
<td>.431*</td>
<td>.452*</td>
<td>.956*</td>
<td>.486*</td>
<td>.189*</td>
<td>.207*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td>.204*</td>
<td>.132*</td>
<td>.268*</td>
<td>.214*</td>
<td>.234*</td>
<td>.447*</td>
<td>.625*</td>
<td>.289*</td>
<td>.207*</td>
<td>.072</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Non-reactivity</td>
<td>.245*</td>
<td>.195*</td>
<td>.243*</td>
<td>.085</td>
<td>.091</td>
<td>.131</td>
<td>.483*</td>
<td>.070</td>
<td>.110</td>
<td>.269*</td>
<td>.199</td>
<td>-</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).  **. Correlation is significant at the 0.01 level (2-tailed).

Note: SR = Self-regulation; CSU = Cognitive strategy use; MME = Meta-cognitive and management efforts; SE = Self-efficacy; IV = Intrinsic values; TA = Anxiety; M = Describing; N = Non-judgmental; O = Observing; A = Awareness; NR = Non-reactivity.

As the Table 2 indicates, EFL students' self-regulation strategies are correlated with their mindfulness (r=.391, sig< .01). Among the subscales of mindfulness, the highest significant correlation is associated with observing (r=.405) followed by, non-judgmental (r=.309), non-reactivity (r=.245), describing (r=.215) and awareness (r=.204).

Concerning the links between different sub-scales of self-regulation and mindfulness, the highest correlation is associated with EFL students' meta-cognitive and management efforts (r=.382) followed by cognitive strategy use (r=.314), intrinsic value (r=.184) and self-efficacy (r=.150) and negatively correlated with test anxiety (r=-.330). In order to predict the effect of mindfulness on self-regulation scale, linear regression was run (Table 3).

Table 3: Linear regression analysis for predicting EFL students' self-regulation

<table>
<thead>
<tr>
<th>Self-regulation Strategies</th>
<th>Measures</th>
<th>B</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant</td>
<td>11.154</td>
<td>5.068</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Mindfulness</td>
<td>.120</td>
<td>5.722</td>
<td>.000</td>
</tr>
<tr>
<td>R = .382</td>
<td>= .146</td>
<td>F = 32.737</td>
<td>Sig = .000</td>
<td></td>
</tr>
</tbody>
</table>

As it is shown in above table, students' mindfulness accounts for a variation in their self-regulation strategies (B= .120, t= 5.722, Sig=.000). As revealed by their β and t values, mindfulness is a positive predictor of the independent variable.

To investigate the second research question, Spearman correlation was employed. As it is illustrated in Table 4, gender does not influence students' mindfulness and self-regulation (self-regulation: r=-.091, sig=.209; mindfulness: r=.012, sig=.872).
Table 4: Spearman correlation between Students' self-regulation and mindfulness in terms of their gender.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Gender</th>
<th>Spearman's Correlation Coefficient</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-regulation</td>
<td>-.091</td>
<td></td>
<td>.209</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>.012</td>
<td></td>
<td>.872</td>
</tr>
</tbody>
</table>

Discussion

The first question of the present study attempted to examine whether or not mindfulness is a predictor of self-regulation strategies. Data presented in Table 3 indicated that small, but statistically significant variation was found for EFL students' self-regulation strategies and mindfulness becomes a consequential predictor and protective factor of self-regulation strategies. One possible explanation could be that mindfulness increases well-being of mind as well as the awareness to the present moment and experiences non-judgmentally. This awareness and non-reaction contribute to transferring more information and experiences to the present moment and increasing ones' self-monitoring and self-observation. According to Zimmerman (2000), transfer of the information and self-observation are of the utmost importance for developing self-regulation strategies. Moreover, it can be inferred from the finding that mindful EFL students may concentrate more on the desired goals and apply more self-regulation strategies to achieve them. This finding shares commonalities with of Hillgaard (2011), who found more mindful students were more attentive and aware of their experiences and thought that were conducive to employ more self-regulation strategies. Additionally, it is noteworthy to mention that all facets of dispositional mindfulness were significantly associated with self-regulation. Among these subscales, the highest correlation was associated with awareness. It may suggest that students who want to be more self-regulated have to pay attention to their state of mind more comprehensively. In other words, they have to increase their observing skill to see more experiences in different contexts, ameliorate their attention to all their experiences, feeling, thoughts and behaviours and promote themselves to express their experiences into their own words without any reaction or judgment. All these attempts ultimately help them be self-regulated more and more and attain their academic goals further. Moreover, it is noteworthy to mention that all subscales of EFL students' self-regulation strategies were indeed associated with the dispositional mindfulness.

The second issue addressed in this study was the likely relationship between EFL students' self-regulation and mindfulness with respect to their gender for which no significant correlation was found. This finding contradicts the pervious finding by Ozan, Gundogdu, Bay, and Celkan, (2012) in which they found a statistically significant relationship between gender and students’ self-regulation. One possible explanation for such inconsistent findings would be due to the differences in sample of the study as well as the participants’ cultural and social backgrounds and contexts. Furthermore, the finding revealed that students’ mindfulness was not correlated with their gender, either. This finding provides parallel evidence with the study conducted by Bowlin and Bower (2012) who found out that all correlations remain the same across the genders.
Conclusion

Generally, it can be concluded from the finding of the present study that mindfulness can be considered as a protective factor in establishing, boosting and regulating cognitive and meta-cognitive strategy in the learning processes. Moreover, as mindfulness and self-regulation are correlated, then in order to be mindful it is necessary that, first, students purposefully regulate their skills such as awareness and attention which are conceptualised as the two fundamental facets of mindfulness. Consequently, mindfulness will be obtained and reinforced through management efforts, cognitive and meta-cognitive strategies, self-efficacy and intrinsic values. Regarding the importance of students’ learning processes particularly in EFL contexts, this finding can have some implications for educational practitioners in general and EFL teachers in particular. In order to facilitate the learning processes and improve students’ learning and academic achievements, it is essential to focus on learners’ affective and cognitive states of mind and the characteristics, which will influence them. Moreover, the findings ameliorate the significant role of dispositional mindfulness as one of the protective individual properties and an influential supporter in the emerging, reinforcing and enhancing of other protective elements such as self-regulation and well-being and reducing the negative factors such as stress and anxiety. It has also some implication for student, too. By focusing on their inner mental states and probing into their affective and cognitive organisations, students can bring these two factors into their conscious awareness and help themselves perceive a vast range of environmental data. By applying these data resources, they may help themselves plan, monitor, and evaluate the specific processes to achieve their desired goals. Accordingly, they attempt to use and regulate all the cognitive and meta-cognitive strategies, which will be helpful in obtaining their purposes.

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An overview of Project Madagascar’s tri-lingual education project development: 2005-2014

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Abstract: This is a record of Project Madagascar’s first ten years implementation outcomes of its aid and development educational program in provision of a successful result with a new tri-lingual (i.e. Malagasy, English and French) teaching curriculum. For this curriculum implementation, there is no ‘second’ language per see. All three languages are used a teaching languages, and this process of multi-linguistic acquisition begins at pre-school, and is implemented in its basic form by Grade 3. Continuing development after this expands vocabulary, with direct and abstract expression in verbal expression, learning processes and written development.

Keywords: multi-lingual teaching, language learning, influence of language

Introduction

Madagascar is an island nation, being roughly one-third the size of the state of Queensland, Australia, and spanning in latitude roughly between Alice Springs and Darwin. Currently there are officially just over 21 million people in Madagascar. However the two generations of large numbers of street kid orphans with no educational opportunities, as well as illiterate people who cannot obtain their identity papers could place Madagascar’s population above 23 million. The island nation is divided into 18 remaining tribal groups, with potential small pockets of unknown groups of people still in the dense coastal rise rainforest, especially in the south east of the island. Sixteen of the tribal groups are descendants of Austral-Polynesian speaking peoples from the Indonesian archipelago spanning back nominally 1400 years. This is when many archaeologists and linguistic experts estimate the first outrigger group arrived in Madagascar after traversing the Indian Ocean, much as their distant cousins did in the Pacific Ocean whose ancestral origins were also in Indonesian archipelago. Genetic studies by Matthew E, et al (2005) indicate that 9% of the modern Malagasy males carry the Congolese pygmy gene marker, which means about 20% of the general population have this genetic makeup. This tallies with the oral tradition that the Malagasy Austral-Polynesian ancestors originally settled on the coast, and only later when penetrating the inner jungle and forest of the island encountered the ‘little forest people’. This genetic background often confounds medical growth rates in Malagasy, as the expression of this genetic background make many of the Malagasy people short and fine in stature, which is often medically mistaken for the evident stunting due to the poverty driven history of Madagascar in the past century. According to Matthew, et al (2005) the Malagasy people have a unique blend of African and Asian genetics that are of specific interest to migratory, dietary and medical anthropologists.

Madagascar is known for its bio-diversity that merits much international interest. This bio-diversity is now limited to less than 20% of the island remnant forests and savannah scrublands. Yet the unique and vibrant traditional culture and social structures that had previously protected much of this biodiversity have been eroded by colonization and post-colonial poverty mixed with global resource extraction intrusion into almost every aspect of this island’s society. It is sad that other than some of the island’s music, the traditional
culture remains mostly unknown to the majority of the international community of social and cultural anthropologists.

Madagascar’s current educational process trends and challenges are illustrated in the Appendix following. Current literacy rates are estimated by NationMaster (2010) as 67 – 72%. But literacy is in danger of falling as over 10% of children who should be in primary school are absent from the education system. Worse still, in primary school there is more than 20% repetition rate, according to Lassibille et al (2010) investigations, which ultimately leads to a majority of such students dropping out from their education program. NationMaster (2010) similarly reports primary school completion rate as 58%, and enrolment rate in secondary level is only 11% for ongoing high school studies.

Project Madagascar was conceived over the two-year period from 2003 and 2004, with two site visits by Australian interested parties. This resulted in an official invitation by the Assemblée de Dieu Church Association of Madagascar to the Australian delegation to undertake aid and development work with them in the area of much needed education. The original concept in 2003 was only to provide primary school based education, as at that time, the majority of 70% of student cohort undertaking education in Madagascar were rural based, and most did not make it past Grade 3 in classic inherited colonial based education. Survey at the time revealed that the inherited colonial bureaucracy used French as its official language, so a bi-lingual curriculum (i.e. French and English) was originally envisaged, and the first entire 21-year project proposal was then developed to Australian AusAID standards by Andreas Helwig in October 2004. Considerable modification to the original program of an Australian educational facility in Madagascar based on Australian educational process was undertaken to develop a project that would be driven and ‘owned’ by the Malagasy themselves. After review of this draft project proposal with ACCIR Inc., a national Australian aid and development national group, another visit was undertaken in April 2005 to Madagascar with a working party to ensure the Project was as expected for an educational partnership aid and development program in Madagascar. The bi-lingual project was then signed off and submitted for Australian tax-deductibility, and the project officially began private fundraising in July 2005.

A site visit in October 2005 resulted in an organizational structure to implement the project in Madagascar, and the first Community and Learning Centre (CLC) Malagasy Development Committee was formed. It was during this visit, that two challenges emerged. Lalaina challenged Andreas to include the Malagasy language in the educational program, and secondly from most of the Malagasy group came the wish that any such multi-linguistics based educational program should extend to all school grade years to matriculation in Grade 12. These challenges were reviewed by the Australian Project Madagascar Executive entity.

Investigations into this challenge and proposal over the next 9 months revealed that both French and global post-colonial influences reached deep into Malagasy life and politics; and particularly so in many of the elite educated in Madagascar, often to the detriment of the remainder of the nation. One of the Malagasy CLC committee project leaders lamented that his children, who had undertaken French schooling, as is offered in Antananarivo, that the teenagers now expressed themselves better in French than their traditional language. So the two additional challenges were accepted, and integrated into the Project, largely on the basis from Lalaina’s Master’s Degree in Arts survey of linguistics and cultural expression, where she had noted that French in the central area of the island, on the plateau where the capital Antananarivo lies, was extinguishing Malagasy as the language of expression. Also concurrent from her research into Malagasy linguistics was survey of the variety of dialects from the 18 remaining tribal groups. Bouwer (2003) in her linguistic studies of the Bara southern group also confirms this. From Lalaina’s linguistics Master’s Program research, she found that these multiple dialects could be regionally broken into Northern, Central Plateau
(Merina or the official ‘high’ Malagasy), Southeastern, and West/South West, where common language expression occurred that these local regional populaces could understand each other. Adjustment of the Malagasy language curriculum in Primary School for these regions has already been considered and developed to utilize in the future.

Investigation of this issue continued by Andreas Helwig at the time, with research into global databases on Madagascar from Australia was undertaken, as well as detailed discussion in Madagascar with Lalaina and Ben who opened up Malagasy understanding in regards to the Project potential role and scoping with respect to preservation of Malagasy culture. The history of Madagascar and anthological data revealed that the loss of Malagasy language and culture was severely weakening the Malagasy traditional culture of “Fihavanana” – which roughly translates to ‘gracious relationship based on love, respect, friendship, time for each other and family, allegiance to one another and good works towards one another’. A Malagasy proverb translation encapsulates this as, “It is better to lose a fortune than to lose a friend”. Loss of Malagasy language expression was damaging this positive aspect of societal behaviour. It was being replaced by the global “one-world culture”, competitiveness and consumerism that is very foreign to the Malagasy culture of care, sharing and provision to friends and family. Not only this, but such language expression loss was also heavily contributing to loss of access to thousands of years of ancestral wisdom and knowledge that was bound up in a very large collection of Malagasy proverbs, oral poetry heroic epics of Madagascar’s history. Loss of Malagasy language is also contributing to the demise of generational development of a very Malagasy unique cultural emphatic speech style that could range from conciliatory to combative to factual emphasis without ever mentioning the subject under discussion. This form of public speaking unique to Madagascar is used in community debates dealing with difficult problems or for the gift of wisdom as part of couple’s engagements and weddings ceremony.

So it was on this basis that in 2006, it was formalized in the Project scope to develop a completely new tri-language teaching curriculum that aligns both with the French based national educational system, retains and emphasizes cultural language and community expression, and provided English as the international language. English was for future Malagasy students to access a much wider scientific and global knowledge base. The minimum standard to attain was the international Baccalaureate matriculation standard. So the development of a Kindergarten, Preschool to Grade 12 Curriculum commenced in 2007. The first preschool intake of students was undertaken in Jan 2007 into Pre-school, with the goal to start Grade 1 in October 2007. There are some fascinating and amazing details of the project development at this stage, and many more followed, that will make fascinating reading when the project history is one day written into book format.

The initial project format was based on ACE International language process, and small incremental goal based learning. This was adapted in many ways and areas to suit the students of Madagascar, but the project remains indebted to ACE South Africa for their initial support and encouragement to continue to develop a unique educational process for Madagascar that encompassed both ancient cultural expression and spanned to include the modern global perspective and standard of international education. ACE South Africa provided both training for Benjamin (co-author) and Tovo the future CLCs Construction Coordinator in Durban, as well as initial curriculum for English and French (based on the bilingual educational process in Quebec in Canada). Lalaina undertook the development of the Malagasy language curriculum as an entirely new component. This was ably illustrated in cultural terms and background settings by Benjamin. So began the curriculum development in earnest with the continuous adaptation and integration of multiple sources. From the Malagasy national educational process came a French component that was integrated with the unique development of new curriculum Malagasy material and existing international English
resources whose outcomes allowed multi-linguistics acquisition in the new educational program.

The question that has been researched in the student’s progress in the past 8 years of Project Madagascar’s educational aid and development project, is whether multi-lingual acquisition can take place successfully as part of early to mid-childhood physiological development? Can a learning environment be created for such multi-language learning, which mirrors the physiological development in the students during this period of schooling, and works successfully alongside their fine motor skill development needed for vocalization, pronunciation, reading and development of writing skills? Can a process be developed that can be recorded as and overall educational policy into a curriculum development.

The approach undertaken for this research was purely assessed on results based interpretation. Project Madagascar’s aims specifically were to provide an multi-lingual learning pathway that allowed student development to proceed to pass all Malagasy National Exams (which are based on French educational standards) at the very least, as well as provide an international educational process that would allow graduates of the pre-tertiary education to link with their original Malagasy culture, but also interpret international cultures. This was to allow integration and interpretation of Malagasy culture in world culture, and to better enable future Malagasy graduates of this educational process to study and engage both internally in Malagasy culture, but also internationally in the world.

So the results of the Malagasy Government national primary school certificate exam (CEPE) were the gauge used to assess this project’s educational process from pre-school to grade 5. All students nationally take the exam, but at a different school location to their own to prevent cheating or coaching in this national exam process.

**Background: Cultural context**

Malagasy traditional society extending back for over eight centuries was based on gender equality, the transfer of bride to her husband’s family after the bride price has been negotiated and the marriage completed. Bloodlines however are through the Mother. Parenthood is the sign of final adult maturity, although for modern women, educational standard at post-graduate level also indicates maturity for those few fortunate enough to make it through to University. According to Rabenoro (2003), this latter change has caused some difficulties in society for educated women, as to find a suitable husband can remain difficult. Marriage, though changing in the Antananarivo and larger centres, still for many of the populace tends to be based on tribal group, ancestral status (i.e. based on whether they are descendants of the Royal families, courtier class, business class or slave class) as well as now educational standard achieved.

As described by Rabenoro (2003) Motherhood in Madagascar is very important, and an expectant Mother, like in many cultures will talk to and play music to the child in womb. It is from this backdrop that infant language development begins in Madagascar. As the child grows and develops, there are specific roles elder children are expected to take up, especially care of their younger siblings (which often means time away from schooling) if both parents work. In rural areas, all children of the family help with seedtime and harvest to maintain basic survival. Similarly elder children in Madagascar, who come from trading families help the parents to follow the rotational markets that occur in all districts and major centres, which again results in absence from school. Teenage years general begin at age 10-11 in Madagascar, and until an emerging adult is married, and has a child to be responsible for, they are perceived as just a ‘youth’, even up to the age of 30.
Madagascar inherited a French colonial education system. From this was founded a Francophile language program based on severe detraction to students for anything that was not done according to this system. In Malagasy culture, it has regrettably produced a group of educated people who either want to act as Europeans, or Malagasy people who do not have self-confidence to speak out or espouse any ideas different from those engrained into them by this colonial education process. This has caused the project difficulties with teaching staff. It was found that Malagasy experienced teachers, regardless of their qualifications or experience, could not handle or deliver the CLC incremental competency based self-learning process. Their own school background and tenancy in the current Public or Private French school system is too entrenched to handle this teaching/learning delivery method used in the Project’s Community and Learning Centres. Teaching staff had to be trained from young teaching staff, and then progress them gradually up through the grades in primary school on onward if they have the capability. Flexible, group reflective and group adaptive teaching to manage student progress has to be taught. A number of such short CLC workshops have been developed and delivered over the years by the Australian Project Executive.

Culturally, the Malagasy who have had exposure to grandparents and their more traditional knowledge have an amazing understanding of their nation’s plant bio-diversity and history. But as many adults have died in the past few decades of poverty in this nation, grandparents in many families are rare. The generational loss of knowledge of culture, cultural expression and accumulated knowledge and wisdom that grandparents traditional provided has been interrupted in the latter years of the 20th century, and in many towns and centres replaced by Western cultural influence from Euro-TV. Similarly, as 70% of Malagasy families fall into the U.N. defined poverty group (i.e. earning less than $2 per day for a family income), practical day-to-day survival in many cases takes precedence for child involvement, over their education for many rural and trader-based families. In Anosibe, the CLC students cohort (now over 200), about 50% have marginal dietary sufficiency for normal growth, half of these students being definitely malnourished to the extent it interferes with both their child growth spurts, but also their learning ability. In CLC-Itaosy, which has a slightly more diverse demography, the figure is 30% of students with half again suffering significant malnutrition. Specific meal supplementation processes are needed and catered for in the CLC programs to improve learning ability.

**Methodology**

**General CLC educational approach**

The scope for this first overview of methodology is limited to primary school education in Madagascar, as many as 35% of the student cohort attending primary school will never complete past Grade 3. The first period of development in Primary School is for Pre-school to Grade 2. After socialization in kindergarten, and reading readiness testing after an initial Pre-school program, infant education spans for the age group equivalent in Grade 1 to Grade 2. Here there are two teaching methods employed. Classic group class teaching activities based...
on vocalization, motion, centralized white-board focus and the like are utilized for part of the time. This is used to vocalize the languages initial acquisition, as well as develop confidence in the children’s own presentation back to their peer group. But from Grade 1 on, students have their own ‘office’, which is a small desk with petition in-between to prevent copying of others work, as shown in photos 1 and 2. Students are responsible for their work area to be kept tidy and clean. The students each have their own student’s subject workbooks. These are the modulised curriculum. Once a child has completed a workbook, there is signal post for the teaching staff to note, come and check the work with the student. If the work has been completed correctly, a test is given to the individual student. Competency of the marked work must be between 80 – 100%, depending on the nature of the workbook content. If the student does not achieve this, there is an iterative and intervention in the areas of learning incomprehension undertaken by the teaching staff member. But the student must achieve this competency rate prior to attempt of the next workbook. Workbooks generally are between 25 – 35 pages that need filling out and completion by each student. Each student progresses through their work modules at their own pace. Some students manage up to 24 such modules per year, while others manage 16 per year. These rates speed up or slow for each student depending on their individual physiological and development rates, as well as class attendance. The CLC has some students who cannot attend class on a continuous basis, due to other family survival obligations. This modulised curriculum allows them to resume their individualized learning processes, and at times teaching staff will also deliver some of the curriculum to students at home due to such circumstance or due to accident or serious illness. All students respond well to this process, and though students who have health issues or other home duties that slow their rate of progress, their education process can continue without repeating grade work.

The phonetic linguistics bridging pathway diagram is shown in Figure 1. This summarizes how each language development is related to the overall phonetics library for each student. It is this phonetics library development that underpins their ability to master three languages within this teaching curriculum.

The teaching staff members also respond well to this already planned structure of workbook lessons that lead one to another. As Lassibille et al, (2010), pointed out in their study, one of the major issues in the Malagasy public schooling system is the lack of lesson planning for learning objectives, forward linkage to future such objectives and measurement of progress of students. This small goal competency based pre-structure workbook lessons takes care of all of these issues for teachers, and provides a firm framework in which teaching staff can act and intervene to improve individual student outcomes.

For the infants schooling development there are 50 workbooks – two for Pre-school, and 48 for Grades 1 and 2 that concentrate on English language development and numeracy in maths. (The reason for concentration on English will be explained in the subsequent section.) As an example, typical results (based on 2013/14 academic year results) for the infant study years would be:
• For a student cohort of 32 children in Grade 1 in CLC-Anosibe there was a 94% completion for 22 student workbooks.

• For a student cohort of 27 children in Grade 2 in CLC-Itaosy, there was a 90% completion rate for 24 workbooks.

The second stage is the change from infants’ prime language literacy and numeracy acquisition in Grades 3 and 5, to multi-subject studies in Social Studies and Geography (relevant to Malagasy culture), Introductory Science, Maths, Early Health Studies. All three languages, i.e. English, French and Malagasy are implemented, used in an integrated way for learning and studied during these grade years.

There is also the first shift in learning process to more workload for the students’ self-study/learning process, which prepares them ultimately for Middle School Grade 6, where they will have to develop their own self-learning study plan and goals. In primary child educational development through these years, there are 130 workbooks to complete that encompass all the subject content already listed. These student workbooks are a continuous study timeline, and children progress through these as far as they can in these three years. The total units contain extension higher-level material for those who can attain the competency and progression. As an example, typical results (based on 2013/14 academic year) for the primary school Grades 3 – 5 study years outcomes would be:

• For a student cohort of 20 children in Grade 3 in CLC-Anosibe there was a 100% completion for 50 student workbooks.

• For a student cohort of 23 children in Grade 4 in CLC-Itaosy, there was a 70% completion rate for 31 workbooks.

• For a student cohort of 20 children in Grade 5 in CLC-Anosibe there was an 82% completion for 44 student workbooks to prepare them for the national Malagasy CEPE Primary School Leaving Exam for entry into middle school.

Figure 2 provides a general outline summary of linguistic and numeracy development tracking through Pre-school to Grade 3. This shows the inter-relationship between languages based on phonetics learning moving from fun rote based object orientation, then gradual change to practice and competency based student individual workbook progression. It also details the move from phonetic based physical objects and activity based verbs, to language modifiers, and their abstract representation in the alphabet, numeracy and the written languages. This process
expands with the ever-growing spoken language capabilities. It cannot be emphasized sufficiently, that competency at over 90% in these early infant school years to first primary school grade 3, is required at this levels for language acquisition and manipulation; and extension into new curriculum content. Incremental testing on workbook assessment and then short specific individual test must be passed at this competency level. If the student cannot pass at this level, there is an iterative intervention process, to bring the student’s lacking areas of understanding up to this level, prior to moving on. This accommodates individual student’s natural physiological and scholarship development timelines.

Aside from the issues and outcomes mentioned, there is also a CLC educational and relational culture that may differ from many global and Australian educational processes. Here student competency at above 80% is required for progression – not 50%. Student compete with each other, not to win, but to help better each other, so that when there is a lacking knowledge discovered, it can be recognized, and intervention undertaken, to in fact make it a future strength of the student’s ability. Student self-respect for themselves and each other is paramount, as is the quality to help and serve each other in helpful positive ways (i.e. the emphasis of the traditional Malagasy quality of ‘Fihavanana’). The students are also instructed on traditional respect for all members of their family, their elders in community and society, and learn to consider how fortunate they are to have such educational opportunity. Whenever the Community and Learning Centers encounter a student, who by Grade 5 may have significantly more knowledge and have developed abilities beyond those of their parent, who behaves in a negative manner to their family elders and siblings, this issue is dealt with immediately. The CLCs aim not to produce elite citizens, but to see self-actualizing adults with the ability and knowledge to undertake community development in society and lever up with what they have at their hand.

Students are expected, as in traditional Malagasy society to respect all members, class, and rights; and as they had educational opportunities, to help others who do not. Some of the students are already teaching their parents and elder siblings French and English in the home. In the very poor district of Anosibe, where there are no-English teaching public schools, in fact the CLC Anosibe students are become the neighbourhood’s only English teaching resource, and by this means English is now occasionally heard in public.

So there are a number of different internal cultural contexts also adopted in the Project Madagascar CLC program that may differ to both the Malagasy public school system, and other global education programs.

Outline of CLC tri-language acquisition approach

Language is a means of communication, and its development in some ways can be likened that of developing a bridge to carry multiple traffic to and fro between individuals, as well as regional and global entities.

In the very early childhood development, the language that naturally begins to develop is that of the mother tongue as spoken by parents, family and community of origin. This very first imprint of the ability to verbally communicate forms the first ‘language’ bridge.

In project Madagascar, due to the linguistic comparison studies by Lalaina Ravoniharimanana, it was found that English actually has the by far simplest phonic library of sounds used, which have similarities with Malagasy as well. French is more complex, as there are a number of nuances that result in change in phonic for various syllables. Malagasy was found to have six phonic sounds found in no other language reviewed at the time. Secondly verbal communications in Madagascar have a number of nuance non-verbal response sounds that are mostly absent in other languages. Depending on how these non-
verbal sounds are made, they can indicate continuing interest, rejection, anger, agreement, etc. with the speaker being listened to.

So for Project Madagascar’s language program, a teaching ‘three-lane’ language carriageway ‘bridge’ structure was devised and implemented. The construct of all language acquisition was based on phonic syllables, and then their recognition and use with objects, in the abstract written form or actions has been the basis of the teaching process.

For this, once the structure was developed for this three language bridge, the first small working platform added was the mother tongue link-language being Malagasy. From using this temporary working platform, initial two years of instruction in languages in Grades 1 & 2 developed the phonic library for English, and in fact the majority of teaching after the first few months was in English. Naturally the students also knew and understood the general Malagasy equivalence for objects and actions. During this period, also the written work and verbalization of English was developed in the students.

Once this basic linguistic phonics syllable library was acquired to an acceptable level, then in Grade 3, an additional ‘laneway’ of language study and teaching use, were added to the linguistic bridge learning platform. The English phonics library could be used and modified for formal study integration of French and Malagasy. The Malagasy language in Grade 3 began then to then allow articulation of their native culture and expression with special workbook modules developed for its preservation – particularly for later use in Middle School studies. French naturally became important in study, as current pro-Francophile politics in Madagascar dictate that all official school exams must be in the French language, and only a Malagasy translation of the exam papers can be made available on request, noting prior to 2010 the exams were provided in both Malagasy or French.
English language and use in teaching continues during the full five years of primary school, and as there is no English testing program as yet for any primary school education program available, a CLC English exam is undertaken. This is based on Queensland English educational practices for Grade 4 – 5 standards. Here there is an unpractised oral English tests, a short practiced English oral test is applied with Grade 7 – 8 level English words introduced, plus a written essay with Malagasy to English translation capability tested. All three classes of students tested have passed this exam, with nominally 20% at equivalent Australian Grade 3 English level, another 75% at Grade 4 equivalence, and 5% at Grade 5 Australian English standard.

Findings

In spite of a coup in 2009, with subsequent attempted military takeover’s and the suspension of all international aid to Madagascar, the GFC that followed, the doubling of food, charcoal fuel prices, transport and liquid fuel costs, and two devastating cyclones across Madagascar in the 8 years of on the ground work in Madagascar, through all of this, CLC students have progressed.

The project has lost students and their families from these educational communities due to economic circumstance, accident and death, but every student remaining has coped with the three-languages curriculum, and the results are becoming more obvious now there are a number of grades in middle school in CLC-Anosibe. In a student cohort of 330 between the two major CLCs in Antananarivo, only three students have lost a grade year progression, and this has been due to severe poverty or loss of parent or guardian. These students were supported by emergency intervention by the CLC staff and community, and now continue to progress.

For the first three-year cohorts of Grade 5 students sitting for the CEPE national exam, (noting all exams from 2010 could only be taken in French, but a Malagasy translation of all exams is offered from this first certificate to the Baccalaureate) the following outcomes (Andrianosoloniaina, 2012–2014) have been attained:

- 2011/12: 100% pass rate with 60% attaining high distinction.
- 2012/13: 100% pass rate with 60% attaining high distinction
- 2013/14: 100% pass rate with 65% attaining high distinction. (Note: high distinction automatically guarantees Grade 6 enrolment in any public or private middle school in Madagascar.)

These results are greatly improved on the average CEPE pass rate, which for Madagascar typically is 69.1% as reported by Lassibille et al (2010).

Discussion

The primary school curriculum is completed, with only continuing work to reduce its local cost. Current local costs if the curriculum per student as an example in Grade 4 – 5 would be $35 - $40 per year/student. This curriculum is now ready for further replication and testing in a potential radio school of the air for Grades 3 – 5.

Current development is in Middle school, where a group of subject leaders (Heads of Department) have contributed to the development of over 2010 middle school student workbooks covering six major subject strands. These six subject strands are Mathematics,
Science, Languages, Arts and Culture, History/Earth Sciences and Healthy Life Science. In another 18 months, the middle school (i.e. grades 6 – 9) curriculum will also be completed, and again will undergo an economic packaging review to ready its replication and testing in rural education. From there students will sit for the BECP national Middle School leaving exam.

That will only leave the ongoing development and extension of middle school curriculum to Grade 12 matriculation, which takes form as the international Baccalaureate.

Conclusion

This is the first Project review publicly reported to date of outcomes in primary school development in three languages teaching implementation. There is much future work for investigation in regards to finer details for the student cohort language abilities and general knowledge uptake outcomes. Other areas to report yet are teacher preparation, detailed linguistics acquisition processes, impacts of nutrition, to apply the outcomes similarly to the student cohort for middle and upper high schools, along with post matriculation paths.

After being told many times by both Australian and other international educators, that teaching in three languages is too difficult, the outcomes of Project Madagascar have illustrated the consistent linguistic phonetic basis that is object orientated does provide a pathway for multiple early language development and acquisition. This was based on some early review of education in Quebec (bi-lingual) and tri-lingual processes in Singapore, and some other European nations.

Even the Malagasy national Education Department had concerns that such an undertaking, even as an aid and development project would be beyond Malagasy students. However, working amongst the most poverty stricken neighbourhood, i.e. Anosibe, in Antananarivo has dispelled this concern. Celebrating the 10-year working milestone in July 2014 while a group of Australian Project Madagascar Executive visited this island nation, the then Grade 7 students hosted the Anosibe Community and Learning Centre special program. During this, in front of their own Malagasy Education Department national representatives, their neighbourhood local government officials, and their families, they confidently hosted the entire program in Malagasy, English and French to the amazement of the audience.

At the time of this document, CLC-Anosibe is starting its Grade 8 educational process, while in the other location in Antananarivo, CLC-Itaosy is preparing for its first Primary School Leaving class of Grade 5. In Antsirabe, about 120 km south, in a rural area, another social enterprise based small school is implementing the primary school curriculum this year up to Grade 2. The initial project conception 12 years ago, included two years went into developing an educational aid and development process to Australian AusAID standards, followed by two year period of intensive work in Madagascar to establish project development process, and then 8 amazing years of continuous professional work has yielded positive results in the 330 students currently enrolled in the project programs.

As the students continue progress, further research into multi-language application and gauging success in educational process will continue to be measured at both the Malagasy grade 9 middle school certificate (BECP) and the international Baccalaureate matriculation exam.

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Journal Issue Review

Alexander Lobok’s probabilistic dialogic pedagogy

Journal of Russian and East European Psychology, 50(6), 5-114.
November–December 2012.

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Alexander Lobok’s work on probabilistic dialogic agency-based pedagogy offers a selection of five writings by the Russian dialogic pedagogy practitioner and theoretician, translated into English for the special issue of the Journal of Russian and East European Psychology.

In my view, the main thought in Alexander Lobok’s work is the promotion of the personal agency of students through social practices and their participation in critical dialogues. His pedagogical approach is based on his twenty years’ practical innovative activity with children, his deep reflection of it and original conceptualisation. In this lies the strength of his writing.

Soviet Union born American scholar of dialogic pedagogy, Eugene Matusov, as guest editor, wrote the introduction and accompanied the readings through comments in the notes, placed at the end of each chapter. The introduction helps the reader to understand this Russian author's background in order to understand his interpretation. The notes clarify some of the issues discussed, also enriching the reading. The direct dialogue between the author and Matusov, written as an interview, gives the reader an opportunity to go beyond the text, simulating hypertext and a backstage of reflections. In this way, some concepts expressed in Lobok's writings are contextualised and updated, making the reading enjoyable and interactive.

In the first selection, My educational odyssey to dialogic agency-based probabilistic pedagogy, the author outlines a brief autobiography. The historical conditions related to the affirmation and diffusion of the movement of perestroika (a political movement of the reform of the Communist Party during the 1980s in the Soviet Union) draws the reader's attention to the issue of education as a real engine of social change, leading to the beginning of Lobok’s journey of discovery and development of a new agency-centred dialogic pedagogy. He proposes a new pedagogy that collides with the proliferation of diverse educational movements such as Developmental Instruction (Vasiliy Davydov, 1990) and the School of Dialogue of Cultures (Vladimir Bibler, 2009), and among many others. In reality, many, but not all of the educational movements of his time, did not go beyond a traditional profile, highlighting the development of agency where the child is seen as a "tool for the assimilation of the academic content we have defined in advance" (p.6), even when curriculum was innovative as well. The author emphasises that ‘real’ thought is developed in one’s personal life through intense personal human feelings and experiences. On this assumption, the author starts a process of dialogical interaction with groups of children, initiating his project of "undirected probabilistic education", defined as “a process of dialogical journeys with children into the most varied cultural spaces”. He organized games and activities in an open educational environment aimed to expand individual agency through contact with the widest possible spectrum of cultural phenomena, in which curriculum – what students actually learn – emerges and cannot be fully predicted in advance.

This first chapter makes us wonder how much freedom teachers have today to experiment and explore new educational paths, as did Alexander Lobok. The difficult
Russian context reminds us that there are no ideal conditions for starting new routes and innovations. The personal curiosity, motivation and involvement create a live action space to introduce new practices and change existing ones. On the basis of the changes in the education (like the introduction of technology today), there is a growing interest in the field of education for teachers’ professional identities, considered as a dynamic process of interpretation with himself and others (Alsup, 2006; Timostsuk & Ugaste, 2010). Therefore, as suggested (Kumpulainen & Lipponen, 2013), “we must understand more deeply the processes of becoming an agentic teacher, and ways to support this development”.

In the second section, Two schools: Psychological foundations of a new educational ontology, the author outlines the basic principles of his probabilistic pedagogy, suggesting a shift from knowledge-based to agency-based society. The author considers the main activity experienced by primary school children to be the learning of materials entirely unconnected with their real needs. Additionally, there is no adequate preparation for secondary school, where more abstract skills are required. Alexander Lobok focuses on the pre-conceptual stage that he considers to be of central importance for the development of human thought and the basis of creativity even for adults’ conceptual thinking. Given these premises, in the probabilistic model the lesson is intended as an event of collective improvisation, during which something happens or does not happen only with a certain degree of probability. The focus is on the child’s own thinking, making the child fully author of his conceptual achievements. The process of Obrazovanie (formal education) allows the creation of something new and unique, with unexpected (unpredictable) direction. The objective is therefore a self-realisation that occurs in a continuous dialogue with the culture. The teacher is also involved in transformation with the student: "... and the result of a dialogue between two participants always gives birth to a third, which belongs to neither the first nor second" (p. 29). Such an approach recalls the views of the Third Generation of the Activity Theory (Engeström, 1987): activity systems giving birth to a third more complex object of each individual system and creating new horizons of meaning. The dialogue between the two systems generates, therefore, a third object, the result of a dynamic process that requires constant negotiation between the different voices. In fact, the influence of Bakhtin (1992) is widely disseminated in Lobok’s reflections.

The critical and open dialogue between Matusov and Lobok clarifies some points in the text, reducing the utopian and rhetorical dimension of the text. Some reflections are reconsidered in a light of most current references, often finding a new agreement between the two scholars. The goals of self-realisation, mutual education, education-as-dialogue appear challenged to reach and still quite unrealised.

In the third chapter The writing person, Lobok is devoted to the application of his model, which starts with simple oral thoughts or words that are interesting to the students. Then in the interactive mode, the teacher brings them back in the form of writing. In this way, the learner discovers that the oral language has a graphical representation; it is the discovery of written text. In the first phase, the teacher’s task is to simply be a mirror for the child’s oral speech, helping the child to see and hear his own sentences, word for word. The second step is to moderate the speech of the child, asking him to repeat the words and find the connection between the oral and written word. Then the sentence is shared with others. In this way, the children realize, in an intuitive manner, various aspects of writing and how sentences are or are not structured. The role of the teacher becomes an "echo that revises itself" (p. 45). The author gives several examples from practical activities with children in the classroom, bringing them to realize the magic of writing and the special reality that it creates. In this way, the focus is not on repeating what the child says to the teacher but on experiencing the joy of writing and sharing it, without fear or concern. According to the author, this approach has a therapeutic base that allows the child to acquire self-confidence and to adapt better to
the world. This approach recalls the method of Narrative Autobiography by Duccio Demetrio (1996), a writing activity (with the use of different inputs and prompts) about life experiences, feelings, and situations in order to clarify and understand problems. By listening to the stories of their peers, a participant can gain a deeper understanding of ‘the other’ and at the same time, reflect and become more aware of his/ her own experiences.

The third chapter is inspiring and full of stimuli, which could be applied in new areas, for example, why not apply the method described by Lobok in teaching a second language? The Lobok’s method described above (helping the child to see and hear his own sentences, moderate the speech and find connections between oral and written word) supports a natural learning of the language, through an anchor to the students’ interest and with a scaffolding role of the teacher. In fact, learning a foreign language in a way similar to the natural process of acquisition of the mother tongue, sharing routine experiences by the child and the adult.

In the fourth chapter, The next-generation school (A tentative conceptual sketch), Lobok presents a manifesto of his educational utopia, using three main directions: agency, dialogue (communication) and development. He encourages thinking on knowledge that leads to the development of a responsible agency in students, allowing the school to be a meeting point between the child and the different cultural forms of the world: "a person with developed thinking is not a slave to knowledge, but its master "(p. 73), creating a knowledge that is subjective and authoritative with respect to external information. Lobok says that the next-generation school is a school of dialogue. This understanding is particularly interesting in the current perspective of intercultural schools today, where it becomes central to the priority of dialogue over monologue. Cultures places in deep dialogic interaction between educators/student and between students means activate “a movement from a lack of understanding toward understanding” (p.83).

In the last chapter, Preschool education bullied: An experiment in establishing a dialogue with a kindergarten educator, Lobok proposes a path of action for moving from theory to action, inviting the reader to take a real and innovative step in the education revolution. The reader can read the book as a climax or development: first the need for a new pedagogical model set in a historical Russian context; next the definition of principles for the new pedagogical model; then the first applications with students; and finally a challenging manifesto for future generations of teachers and education actors. The reading of this book is inspiring because it reminds us that only a lively curiosity and constant observation of educational processes can lead to real change in educational models and processes.

The Russian author is like to define an “above” direction between different educational theories, which is expressed in the pursuit of the best goal possible education (child's own path, authentic understanding, authorship of thought with the aim to make students the agents of their own learning) - such as democracy for the politics or holiness for a man of faith. But the author provides not only a general goal (which is therefore ideal), but also the conceptual and practical tools to work, making everyone involved in education an adept able to work directly with the ideas provided.

It is important to consider that Alexander Lobok’s theory was built on a real practical conduct with students for many years and on a thorough knowledge of the major representatives of the Russian cultural school. As a result, many topics he addressed are current, as shown the live interesting on agency, polyphony, construction of knowledge in actual cultural psychology literature. In addition, the meshes of his thought are open, making possible to anchor new concepts and push the dialogue in educational research. Therefore, Lobok's theory is outstanding among other cultural educational approach.
References


Overcoming the CRISIS – Connecting recovery to learning aspects and self formation

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Abstract: The individual is repeatedly exposed to risk situations in the life course and this may cause crises and increase the likelihood of mental illness. Thus, the question of how to recover mental health after entered mental crises is crucial. The discussion paper aims to explore the resilience pattern recovery as a learning-based phenomenon. The following issues are explored: “Why is resilience a learning-based phenomenon?” “How can a crisis be a starting point of learning that leads to recovery and an increase in coping capacity?” and “What are implications for research and practice of recovery promotion?” A sustainable resolution of crises requires, primarily, accommodative learning by changing structures of experience and behaviour. Recovery, as resilience pattern, always implies a personal development; as a consequence of this, the self can never bounce back to a previous status quo. Existing opportunities of recovery promotion must be exploited, to support people in current crisis management, as well as in their lifelong coping capacity and prevent the manifestations of mental disorders.

Keywords: coping; crises; learning; mental health; recovery; resilience

Initial situation

Call for support of mental health and resilience

Mental health is the result of a mental engagement with the components or structures of an individual’s respective social milieu and is therefore the result of a complex process influenced significantly even by exogenic aspects (WHO, 2001). Life requirements, such as stress factors, can create risks for psychological adjustment and negatively impact mental health. This includes both predictable and unpredictable life events (Seiffge-Krenke, 1994, pp. 32, 36), the loss of a loved person, the experience of violence, or natural disasters, for example, constitute potential sources of stress. In addition, daily stress challenges psychological adjustment. A large-scale European meta-analytic study by Wittchen and Jacobi (2005) estimates that “almost every second person . . . is or has been affected by mental disorders at some point in lifetime” (p. 370). Stress-related disorders such as anxiety, depression and addiction take a pioneering role (Wittchen & Jacobi, 2005).

The importance of mental health promotion is an increasingly important issue dealt with in the current international discourse of, for example, the World Health Organization (WHO, 2006). In this trend, psychological resilience and resilience promotion are increasingly taken up in different discourses of social, political and scientific areas. Resilience building is mentioned as an aim within political strategies on the international level (International Federation of Red Cross and Red Crescent Societies, 2012). Resilience means the ability of the individual to cope even with massive risks and stress so that mental functioning and life success is not negatively affected in the long term (Fingerle, 2009, p. 204). Methods of fostering resilience are desirable and their development is a relevant research question.
The common research focus on resilience promotion

The scientific focus in resilience research lays particularly on the exploration of ways in which resilience in the sense of primary prevention – i.e. prophylactive – can be fostered to prevent the first occurrence of mental impairment (Gillham, Hamilton, Freres, Patton, & Gallop, 2006; Honkanen-Schobert, & Jennes-Rosenthal, 2000; Liossis, Shochet, Millear, Prudence, & Biggs, 2009). According to this, the question of the individual’s opportunities to avoid stress and thereby stress-related negative mental health effects is important. However, given the diverse requirements and risk constellations the individual experiences in his or her lifetime, an utter avoidance of psychological stress is unthinkable. This confirms the presence of psychological symptoms and the prevalence of mental illness. Thus, the comparatively underestimated resilience pattern of recovery (Kumpfer, 1999; Smith et al., 2008, p. 194), which is seen as a restoration of a positive health level after entered symptoms of mental dysfunction (the ability to “bounce back”, e.g. Smith et al. 2008), comes into focus. With respect to it, the following question is highly relevant: What are the learning processes that lead as a consequence of an occurring mental crisis to a recuperation and self-development which prevents a manifestation of mental illness and strengthens life-long coping capacity? Since resilience research is lacking a particularly theoretical background (Helgeson & Lopez, 2010; Luecken & Gress, 2010), a primarily theoretical approach in investigating this question seems promising.

Contribution of the paper

The article provides a discussion on how a psychological crisis can be a starting point of learning that influences the crisis management performance positively and leads to recovery from symptoms of mental dysfunctions. The article will discuss the following issues step by step:

- Why resilience is a learning-based phenomenon.
- How a crisis can be a starting point of learning that leads to recovery and an increase in coping capacity.
- The implications for research and practice of recovery promotion.

The discussion may reveal insights on the relatively underestimated resilience pattern recovery from a pedagogical viewpoint. Suggestions for a scientifically driven practice of recovery promotion are given.

A review on multidisciplinary scientific literature integrates educational science, health science, psychology and social science, as contributors to resilience is an interdisciplinary relevant topic. The discussion takes into account studies with relational resilience constructs such as concept analysis, reviews, and primary empirical studies. Studies that conceptualise resilience as a stable personal property are excluded. The consideration of resilience includes the entire life span.

Resilience and learning in the life span

Defining resilience and its patterns

In this paper, resilience is understood as an adaptation process, which is observable as phenomenon when a person has – as an outcome – a relatively healthy psychological functioning level, even though the person has – as a precondition – experienced a massive strain (Windle, 2011). The resilience process suggests a psychological coping capacity of the
individual in a specific situation. Risk constellations focused in resilience research are multifaceted. Studies consider for example the experience of abuse (Moran & Eckenrode, 1992), the growing up in areas with high rate of poverty and violence (Luthar, 1999), the experience of persistent pain (Rosenbloom, Khan, McCartney, & Katz, 2013) or of natural disasters (Najarian, Sunday, Labruna, & Barry, 2011; Stain et al., 2011). Positive psychological adjustment means a level of mental functioning, which refers to mental health. Therefore, the indicators used include the absence of mental disorders (Lösel & Bender, 1999), the presence of subjective well-being (Werner & Smith, 2001) as well as the acquisition or preservation of age-related appropriate skills and competencies of normal mental development (Masten et al., 2004).

Researchers identify positive adjustment both when an individual shows a maintenance of a positive health level in the face of adverse situations (sustainability pattern) as well as if the individual shows a relatively rapid recovery to a positive level of functioning in the face of critical or traumatic experiences (recovery pattern) (Garmezy, 1991, p. 459; Wustmann, 2009, p. 19; Zautra, 2009). The current paper fixed a positive health level to a non-presence of symptoms that point to mental dysfunction. Recovery, as a restoration of a positive health level refers to a process whereby symptoms of mental dysfunction, sleeplessness, depression, or anxiety for example, may occur due to the risk experience and may lead to a manifestation of mental illness. Due to the fact that recovery runs vary in length – depending on risk factors as well as individual and situational constitution – here the decision is not to limit a specific time frame of recovery, in accordance with Masten and O'Dougherty Wright (2010, p. 221).

Learning as determinant of resilience throughout life

The development of coping capacity over the life span depicts not only an inter-individual but also an individual-related variability. Accordingly, a person may show resilience at one point in life and at another point show no resilience at all. Resilience depends on personal dispositions and personal skills that only through the interaction with a specific situational constellation enable coping capacity. The prevailing understanding of resilience as a stable personal frame of characteristics represented in past decades (e.g. Block & Block, 1980) is no longer acceptable with regard to the current state of research (O’Dougherty Wright & Masten, 2005, p. 18).

Although the probability of experiences of mentally stressful risk situations increases in potential as one ages, a general drop in coping performance is not assumed. Rather, there may exist crucial developmental windows of opportunity for enhancing psychological functioning in middle and later life (Masten & O’Dougherty Wright, 2010). Evidence from resilience studies refers to the possibility of reprogramming the individual’s basic adaptation structures even in adulthood (Baltes & Baltes, 1990; Ong, Bergman, & Chow, 2010; Schulz & Heckhausen, 1996). The psychological coping capacity is suggested as being open to influence through experience and thus resilience is based on learning processes through the course of life.

Less is known about the actual sequences of such processes that, despite risk, result in a positive mental functioning level (Lueckcn & Gress, 2010). However, within the research there is broad agreement on the assumption that personal as well as environmental factors (resilience factors) play a central role in such adaptations and increase the likelihood of positive adjustment. “These are recognized as crucial in achieving resilience and . . . enable the ability to respond positively to risk and alter or reduce the effects of adversity” (Windle, 2011, p. 157). Such factors examined in resilience research are, for example, individual characteristics such as self-esteem (Updegraff, Perez-Brena, Umaña-Taylor, Jahromi, &
Harvey-Mendoza, 2013) and self-efficacy (Werner & Smith, 1992), intelligence (Cederblad, Dahlin, Hagnell, & Hansson, 1995), and coping style or achievement motivation (Masten et al., 2004), but also environmental properties, for example social support (Devereux, Bullock, Bargmann-Losche, & Kyriakou, 2005), or socio-economic status (Masten et al., 2004). In particular, acquired psychological factors developed in the individual interacting with the living world play a special role in the resilience process (Wustmann, 2009). Consequently, coping capacity is learned to a special extent. The factors of self-efficacy (Latimer, Ginis, & Martin, 2005) or coping styles (Greif, 2008), for example, can be modified through experiences during the life course. Thus, resilience is a learning-based phenomenon and resilience factors are crucial starting points in resource-centered strategies to support coping capacity. Such strategies are directly derivable from the resilience concept (Höfler, 2014, p. 36-39).

Researchers often see resilience factors, often referred to as protective factors, as factors present before the occurrence of a risk (Bengel, Meinders-Luecking, & Rottmann, 2009, p. 24). In this context, they are often studied as predictive factors that buffer the risk effect when entering a key risk constellation and thus can predict the avoidance of mental dysfunction (Cederblad, Dahlin, Hagnell, & Hansson, 1994; Dolbier, Smith, & Steinhardt, 2007; Masten, Morison, Pelligrini, & Tellegen, 1992) or, as is considered less frequently, the rapid recovery of mental dysfunction (Alim et al., 2008). Based upon this perception, learning is the precondition required to increase resilience factors and, thus, coping capacity, which upon the occurrence of risk leads to a relatively positive result, as stress is buffered. Therefore, particularly in resilience research, the development of personal coping capacity in a specific temporal sequence of events is being considered:

(I) Learning → Increase in coping capacity → Risk → Avoidance of crisis.

However, in the process of coping with occurring psychological adjustment difficulties, seen as crises, personality and, specifically, coping capacity can be formed. Accordingly, the experience of stress and the experience of the crisis itself can be the starting point of learning. This perception implies the following sequence of observation:

(II) Risk → Occurred crisis → Learning → Increase in coping capacity.

Thus, recovery after crisis cannot be reduced to learning as enhancement of stress-buffering protective factors present before the crisis situation, but have to focus on factors and underlying processes that become relevant within crisis management. In the following, the focus is on the second observation sequence (II) and therefore on associated learning within recovery processes after entered crises.

Recovery - Mental crisis as starting point of an increase in coping capacity

Recovery as a process of crisis resolution and self formation

In resilience research, the terms recovery and bounce back are often used synonymously (Lepore & Revenson, 2006; Smith et al., 2008; Zautra, 2009). The current paper argues for the need for a differentiating perception: ‘Bounce back’, seen as the return to an earlier stage, before the occurrence of risk, may refer only to the level of mental health, but not to the qualitative nature of the individual’s self. Here, a qualitative change and transformation (Masten & O’Daugherty Wright, 2010, p. 221) in the adaptive repertoire – in the sense of reconfiguration – are not considered as separate from recovery (e.g. see Lepore & Revenson,
2006), but rather as process immanent. The rationale for that is the impossibility of an absence of learning as a consequence of successful crisis resolution, which is conducive to personal development, as will be argued.

A deeper consideration of the underlying theoretical concept of crisis shows that a crisis experience always includes the following aspects (Berger & Riecher-Roessler, 2004):

(a) an emotionally significant experience;
(b) an acute and temporary condition; and
(c) the perception of threat and current excessive demand on coping skills.

A crisis is triggered through an adverse experience, i.e. a risk constellation. Both entering a situational circumstance, such as a natural disaster or an accident, as well as developments through the course of life, such as changes that may occur during the transition to a new phase of life, are possible examples (Sonneck, 2000). Crises are usually characterised by profound life changes. These bring a disruption of the subjectively experienced world and represent a particularly cognitive and emotional challenge for the individual concerned if an interruption in the continuity of familiar life contexts arises (Bierlein, 1994, p. 38). Consequently, a crisis can also refer to a trauma when defined with respect to Fischer and Riedesser (1998). They illustrate trauma as a discrepancy between threatening situational factors and individual coping strategies, and this goes hand in hand with feelings of helplessness and defenselessness. In this way, it creates a feeling of shock regarding previous self-perception and perception of the world. Requirements arise when individuals encounter resistance by fulfilling their actions, when routines do not work (Faulstich & Zeuner, 2008, p. 29). This may be depicted, for example, by the occurrence of a serious and life-threatening disease. Accordingly, in general, the diagnosis of cancer implies a change in the already existing situation and brings physical, as well as psychological burdens, such as fear of disease-related life-threatening, chronic pain, reduced mobility or unwanted reactions of the social environment (Schäfer, Döll, Höffler, & Mittag, 2000, p. 23).

The diagnosis of a life-threatening illness has traumatic potential. The more this changes mood and circumstances, the greater the need for adjustment capacity in the new situation to resolve the perceived discrepancy between the old adaption repertoire and the new requirements.

Due to the fact that crises are accompanied by a subjectively experienced excessive demand in a situation rated as important, they imply health-straining distress (Lazarus & Folkman, 1984, p. 63; Tedeschi & Calhoun, 2004, p. 5). The longer the crisis lasts and the more extensive it is experienced, the more the health burden increases. So reactions such as health inhibiting cognitive, emotional and motivational symptoms for example anxiety, depression, irritability or loss of intellectual capacity, but also unhealthy behaviours such as insomnia, social withdrawal or an increased consumption of addictive substances can occur in mental stress reactions after a traumatic experience. When trying to adapt, distress symptoms themselves can then contribute to the reinforcement of the burden and to the intensification of the crisis experience. If there is a manifestation of mental dysfunction and mental illness, for instance a post-traumatic stress disorder (Flatten et al., 2011), such chronic dysfunctions can be seen, with respect to Berger and Riecher-Roessler’s (2004) conceptualisation, more as a consequence of the crisis, rather than as the crisis itself, as crises are defined in terms of an acute and temporary condition.

With respect to the conceptual features of a crisis, the resilience pattern recovery suggests a crisis experience. Whereas recovery includes symptoms of mental dysfunction as a result of a risk (stressor), it refers to the fact that the individual’s adaption does not run smoothly. Distress symptoms as a precondition of the recovery process suggest a mismatch between situational demands and personal coping repertoire [refers to crisis feature (c)] within a subjectively meaningful situation [refers to crisis feature (a)]. Resilience shows up
when the individual returns to a positive health level. Therefore, the state of distress-causing mismatch is limited [refers to crisis feature (b)]. Resilience, as well as its pattern recovery, implies a coping where the mental functioning and life success is not negatively affected in the long term. Thus, using the conceptual framework, which is chosen here, recovery suggests a crisis situation that is handled in the process of returning to health.

Since overcoming the crisis can only be achieved if a fit is made between adaptive performance and requirements of the crisis-triggering situation, a change in the adaptive repertoire is obvious. This implies learning, when learning is defined as the change in the potential of behaviour, and in behaviour itself, based on experience (Gage & Berlinder, 1996, pp. 130-131). According to Holzkamp (1993, p. 182), a crisis can cause a heightened extent of learning compared with other situations where learning takes place. His position is based on the argument that learning is particularly promoted when a person is faced with requirements, obstacles or resistance. If existing skills are not sufficient to cope with demands, there will be action problems that can be seen as learning problems. Consequently, a crisis implies a learning problem that can only be resolved by successful coping with and overcoming the mismatch of requirements and adaptive skills. Thus, in the occurrence of a crisis, it is not only the activation of existing coping strategies that is crucial but also the development of new attitudes, coping skills and behaviour.

As recovery implies an adaptation, which is conducive to the individual’s long term health and success in life, this may require the modification of interpretation structures. This may mean transforming an initial resistance against what has happened or transforming a displacement of what happened into acceptance, integrating what has happened in the life story and finding meaning (Frankl, 1984; Tedeschi & Calhoun, 1995). In particular, when we are no longer able to change a situation we face the challenge to change ourselves (Frankl, 1984, p. 116). Therefore, the successful management of crises specifically implies accommodative learning. As a consequence, a crisis has self-forming potential. Thus, Westphal and Bonanno (2007, p. 422) saw, for example, the coping process as a possibility “to restore self-esteem, develop an optimistic outlook, and regain a sense of mastery over the event”. Recovery can then also be transformative, i.e. the self fundamentally changing accommodative learning, as far as a basic personality change is necessary for the adaptation (Mezirow, 1997). According to Mezirow, the individual obtains the ability to dissolve experienced disturbances during the crisis through a profound change of the self primarily in adulthood. He justified his position through the ability of adult’s self-reflection combined with the anthropologically-based motivation to develop a coherent view of self and the world. This makes it possible to question basic assumptions determining personality and thereby to adapt and transform experience structures, such that the change in self is comprehensive and decisive for identity formation (Mezirow, 1990, 1997).

**Recovery and self formation by the example of posttraumatic growth**

Learning processes, as a result of crises, also play a role in the application of the concept of posttraumatic growth. Emerging only in the 1990s, the concept goes back to Tedeschi and Calhoun (1995). It illustrates a maturation process after a traumatic experience, and concerns in particular changes on a cognitive level. Drawing on results of the investigation of such processes of growth, they found that perceived growth may be described in three areas. In addition to a change in self-perception, a change in the philosophy of life, in terms of a deeper appreciation of life, is reported, as well as a change in the personal experience of relationships to others (Tedeschi & Calhoun, 1996). The concept focuses primarily on the subjective perception of mental development, based on the change in cognitive structures (Calhoun & Tedeschi, 1998). Thus, posttraumatic growth suggests learning and formation of
the self. The level of healthy mental functioning – usually as measured by pathological symptoms or subjective well-being – is not directly related to a maturing experience. “The available data suggest that experiencing higher levels of growth is correlated with, and may perhaps result in, reducing levels of psychological distress, but not always” (Tedeschi & Calhoun, 2004, p. 13). Posttraumatic growth shows that the individual development of the self is a process that is different from the development in health levels, but both processes are strongly associated (Tedeschi & Calhoun, 2004, p. 13).

The concept of posttraumatic growth in these cases is interesting for resilience research if the definition of growth and its outcomes coincides with the construct of recovery. Based on this definition in paper, posttraumatic growth is a pattern of recovery, if it defines a functioning level referring to relaxing from mental health impairment. The recovery of the mental health level based on the change of the self (in this case includes a perception of growth) after experiencing a crisis (in this case a trauma) in terms of making a fit between adaptive repertoire and resulting requirements. Recovery always implies a successful fit, which is conducive to the individual’s development and, consequently, determines the achievement of a positive health level. Even if the individual returned to the same level of health as before the crisis (bounce back), a falling back to a previous status quo of self is unthinkable, because the sustainable resolution of crisis requires learning by changing psychological structures of experience and related behaviour.

Implications for research and practice of recovery promotion

This research highlights how resilience promotion is being recognised. The number of practical programs that aim on fostering resilience are increasing (British Red Cross, 2013; Frontline Consulting Group, 2012, Gruhl, 2013; Liossis, Shochet, Millear, & Biggs, 2009; Reivich, Seligman, & McBride, 2011) and, there are programs evaluated as being effective (e.g. Liossis et al., 2009). Most of them aim to prevent mental dysfunction and to buffer stress. Given the diverse requirements and risk constellations an individual may experience in his or her lifetime, the experience of crises in addition to mental health impairment may be expected. Therefore, also the focus on recovery promotion strategies in resilience research is relevant. Recovery promotion is possible in contexts of coaching, counselling, supervision, and also teaching. Many target groups may benefit from recovery promotion programs – such as particularly burdened groups, the chronically ill, or refugees and victims of natural disasters for example, but also individuals facing daily struggles such as stressed students or teachers under difficult circumstances. As every individual faces critical life situations and may experience crises, an effective recovery-promotion practice and community awareness is of great importance. The benefit of offers that are targeted and aligned to specific crisis situations and their needs show, for example, psychosocially oriented trainings for chronically ill patients are most likely to support psychological adjustment to a disease and therewith-related mental crises (Lamparter-Lang, 1997).

However, the heterogeneity of resilience studies that validate resilience factors – the starting points for measures – challenges the development of target-group specific education strategies. A resilience factor validated in one study is not generally helpful in realising resilience independently of the particular context in which the factor is confirmed. For example, factors that promote a sustainable health level despite risk must not create the same effect on recovery (Alim et al., 2008, p. 1572). It can be assumed that there are special factors and processes that underlie recovery from a crisis. They gain importance only within a real crisis and determine the process. Therefore, if the aim is to promote recovery, the focus of research and practice cannot be reduced to a promotion of protective factors, which are present before the crises occur and buffer stress impact.
Research provides evidence on recovery-supporting factors and underlying processes within crisis management, which can be starting points for a deeper scientific exploration as well as for practical interventions. For example, Tedeschi and Calhoun notice, with respect to a crisis experience and related emotions, that the degree of self-disclosure to oneself and others is crucial for the process of self-formation (Tedeschi & Calhoun, 2004, p. 7). In addition, the attribution of meaning to experienced distress in crisis, which can be debilitating, is crucial for the constructive advancement of changing cognitive schemata, and thus for learning that leads to positive self-development (Tedeschi & Calhoun, 2004, p. 8). Furthermore, the proximity to other people who have had similar experiences can provide hope and a positive impact on the process of recovery. The demonstration of alternative perspectives can be helpful in the process of accommodative learning in the formation of new interpretation schemata, goals and meaning (Mezirow, 1997; Tedeschi & Calhoun, 1996). In research, there is also evidence that a self-distorting perception can sometimes be temporarily supportive in crisis management, in order to achieve a good development result (McFarland & Alvaro, 2000). Through the development of appropriate measures that take into account such factors in reference to content, methods and settings, coping with crises situations can be supported and the likelihood of the manifestation of mental disorders with clinical relevance and the need for therapy may be reduced.

Since scientists considered the heterogeneous definition and operationalisation of the resilience construct through critical studies (e.g. Luthar, Cicchetti, & Becker, 2000, p. 8; Shaffer, Egeland, & Wang, 2010, p. 87), researchers should inform practice by making clear their own underlying resilience definition and the indicators they choose when validating resilience factors. In practice, professionals have to be aware of, and must design their actions in reference to validated, decisive factors and processes. There are also special educational practices that promote required accommodative learning, such as fostering self-complexity (e.g. Greve, Leipold, & Meyer, 2009, p. 180).

Opportunities for the individual based on the exploration of recovery processes and ways of targeted promotion are not only justified in order to help in the current crisis situation, but also with regard to the further healthy development. With respect to the challenge model by Zimmerman and Arunkumar (1994), the encounter between the individual and repeated risk constellations may influence the development of psychological adjustment positively if the individual can ultimately overcome the challenging situation. The result is an increase in competence in the adaptive system that causes consecutive situations whereby risk effects can be mitigated. Thus, the successful management of crises is a potential amplifier for learning processes that enhance and improve coping strategies. For example, the personality factors of self-efficacy and future orientation, identified by Bonanno and Westphal (2007), that can emerge from the crisis and help to overcome it, are supported by research (e.g. see Werner & Smith, 2001), and are also confirmed as protective factors that predict a future maintenance of a positive health level, despite risk, and therefore buffer stress. Thus, promoting the learning processes that lead to recovery after crisis may be even important for a sustainable health level in the further development.

Summary

Given the assumption that the individual repeatedly faces risk situations through the course of life, which may cause crises and increase the likelihood of mental illness, the question of how it is possible to recover mental functioning in consequence of the occurrence of mental crises is critical. The fact that crises imply a mismatch between the demands of the situation and the adaptive repertoire of the individual, the resolution of this mismatch requires a learning, which provides the fit through changing structures of behaviour potential and behaviour to
adapt to the challenges. If the coping succeeds, the individual is given the chance to experience an increase in coping competence and face strengthened re-emerging risk situations. Thus, crises reveal the opportunity for formation of the self. The successful management of crises always implies a development, whereby in consequence the self can never fall back to a previous status quo of self. Resilience research should focus more on the recovery pattern and especially on learning as well, as its condition factors can lead to a positive development after crises have been entered; in this way, it should inform recovery-promotion practice. Professionals such as counsellors, coaches or teachers, have to be aware of, and must design their actions in reference to validated, decisive factors and processes that promote the needed self-development of their target groups so that they can overcome their specific crises experiences.

References


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