# CONFLICTS IN OFFSHORE LEARNING ENVIRONMENTS OF A UNIVERSITY PREPARATORY MATHEMATICS COURSE

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*Many university programs are offered offshore to students whose first language and culture is not the same as the program's creator and where teachers' language and culture may not be the same as the students or the creators. This study investigated potential conflicts in a Hong Kong setting in a mathematics foundation classroom using an ethnographic approach and analysed the data using Valsiner's Zone theory. It is important to investigate the issues that arise from implementing such a program so that the best interests of both the student and the university are served while providing adequate support for the teachers.*

## INTRODUCTION

Australian universities are currently concerned with principles of provision regarding offshore partnerships so that 'universities should ensure that these services of the partner are of the same standard as offered by the university itself' (AVCC, 2002, p. 36). But what is same standard? We must not, as the UNESCO Assistant Director of Education warned (in Gribble & Ziguras, 2003, p. 212) 'dissociate education from the social, cultural and political origins of a country'. In Hong Kong universities, Pratt and colleagues found teaching traits deeply rooted in the cultural values and social norms where teachers guide students systematically, so 'the effective Chinese teachers are expected to adapt to their audience, guiding them step-by-step through content' (1999, p.253). This particular trait appears to be in conflict with expectations of western universities where lecturers and curricula aim to foster student independence.

But differences in cultural values extend beyond teaching, as Hofstede (1991) believes culture is a fundamental phenomenon that affects 'the way we live, are brought up, manage and are managed, and die; but also the theories we are able to develop to explain our own practices' (p. 170).

Many foundation or preparatory programs at university aim to address some of the differences especially in relation to students' knowledge and skills in particular subject areas (including mathematics), academic English, and reorientation to study at a western university. However to implement an offshore program successfully, staff also need to directly address cultural difference not only at the classroom level but also at government, management, curriculum, teacher and parent levels.

To investigate the issues and conflicts that arise in implementing an offshore program in detail, the author undertook an ethnographic study in Hong Kong in a four-course tertiary preparatory program from which themes or identifiable phenomena could

emerge. These phenomena were then analysed using sociocultural theories. This paper will detail some of the results in terms of the mathematics course.

## THEORETICAL FRAMEWORK

To investigate the multiple perspectives in such an international setting a suitable framework incorporating sociocultural practices was needed which encompassed many of the themes which emerged from the study. Zone Theory (Valsiner, 1997) was used as it accounted for the 'dynamic interactionism' in the classroom and could identify cultural conflicts between all stakeholders. It also lends itself well to qualitative research (Pressick-Kilborn & Walker, 1999) and has been used in mathematics education (Galbraith & Goos, 2004). Within the Zone framework, other theories were used to help explain particular phenomena. The theory of didactic contracts by Brousseau (1997) provided avenues to investigate further conflicts between the teacher and the student; work by Watkins and Biggs (1996) provided insights into cross-cultural perspectives on learner preferences; and Seah's (2002) work highlighted cross-cultural differences in values and beliefs in the classroom from a teachers perspective based in part on Hofstede's (1991) work on cultural dimensions.

Valsiner's theoretical framework includes three Zones: Zone of Free Movement (ZFM); Zone of Promoted Action (ZPA) and Zone of Proximal Development (ZPD). These zones constitute an interdependent system that can account for the complex relationships between the many constraints in any teaching and learning environment, actions specifically promoted, and the changing perceptions of the teacher.

Zone of Proximal Development is the difference between a learner's 'actual development level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers' (Vygotsky, 1978 in Valsiner, 1997, p. 152). In this present setting for example, if teachers or curricula promote mathematics tasks in English that are too far away from students' present capabilities, then these tasks are unlikely to be assimilated unless sufficient scaffolding is provided.

According to Valsiner (1997), the Zone of Free Movement represents environmental constraints that limit freedom of action and thought based on a person's relationship with the structure of a given environmental setting. This relationship is socially constructed by others (teachers, administrators, the curriculum writers) and their cultural meaning system. The ZFM provides the framework for their activities and emotions as these are controlled in 'culturally expected ways in different social settings' (p. 189). These areas can be 'on or off limits' and are time and context dependent. What is off limits in one environment may be within limits in another. In a school, while there are some explicit changes in zones from year to year and from class to class, some ongoing cultural norms are assumed and some constraints that have been internalised by the person as they develop may become part of the deep value system of the person, which may be resistant to change.

However if there is a change in any of the teacher/student/curriculum cultures then the ZFM may change dramatically, and there could be conflicting beliefs/values, class rules, different expectations etc. Thus the constraints on learning, both inside and outside the classroom, have to be identified and articulated. In this context both students and teachers ZFM are considered. For teachers/students in the current setting, elements of the ZFM include: their students/teachers, whose perceived abilities and behaviours may constrain teaching/students actions; their expertise in the language; past didactical contracts (Brousseau, 1997); curriculum and assessment requirements which set the choice of topics, teaching methods, and the time available to teach required content; outside constraints such as other jobs (both student and teacher), cultural environment, parents and government policies (e.g., bilingual education policy, visa requirements); and resources (e.g., teaching materials).

While the ZFM suggests which teaching, student or administration actions are possible, the Zone of Promoted Action (ZPA) symbolizes the efforts of a teacher, the curriculum or others, to promote particular actions. For example the curriculum may promote a particular mathematics course or teaching approach. However the ZPA is not binding, thus students may not want to learn any mathematics. It must also be in the ZPD, so having a low listening and speaking English score in a class which promotes an advanced communicative approach, may result in students' inability to participate or learn. It is also important that the ZPA be within the ZFM, and is also consistent with their ZPD; For example the actions promoted by the curriculum must be within the teacher's reach if a teacher is to embrace a different approach to teaching.

This particular ZPA/ZFM system working specifically in the classroom between the student and the teacher is reflected in the didactic contract concept (Brousseau, 1997). Agreements and expectations between the HK teacher and HK students about what is happening in the classroom may not be fully understood by curriculum designers. This contract reflects cultural assumptions about the work of teachers and students.

Education is generally seen as heavily influenced by culture (Eckermann, 1994) and hence values of that culture, but it also creates it own cultural practices so it is not surprising that when two educational systems meet, conflicts occur. Hofstede (1991) considers each culture as uniquely defined along five cultural dimensions, the first four of which emerged from western research and the fifth from Asian culture research. Table 1 compares Hofstede's dimensions in Hong Kong and Australia. While Hofstede's work is the benchmark for discussion on the implications of differences in national cultures, it does have its critics (e.g., McSweeney, 2003/4). The importance here is simply to highlight the large cultural distance Hofstede found in most dimensions particularly in individualism and long-term orientation. These dimensions permeate all aspects of society and at the heart of these are values. Values are 'broad tendencies to prefer certain states of affairs over others [and] many values

remain unconscious to those who hold them... they can only be inferred from the way people act under various circumstances' (Hofstede, 1991, p. 8).

Table 1: Hofstede's cultural dimension indices (1-100) for Hong Kong and Australia

| Index | HK | Aus | Brief description |
|---|---|---|---|
| Power distance | 68 | 36 | The extent to which the less powerful expect and accept that power is distributed unequally |
| Individualism | 25 | 90 | Ties between individuals are loose and everyone is expected to look after oneself and family |
| Masculinity | 57 | 61 | Societies where social gender roles are distinct |
| Uncertainty avoidance | 29 | 51 | Extent to which members feel threatened by uncertain or unknown situations |
| Long term orientation | 96 | 31 | Includes persistence, ordering relationships by status & observing this order, thrift, sense of shame, (short term: personal steadiness, protection of face, respect for tradition & reciprocation of greetings favours) |

These deep values are usually programmed in our mind by the age of 10, mainly by family and reinforced by teachers and classmates in early school life, and have a direct influence on learning behaviour. However, there are also manifestations of values in practice and many practices are learned through socialization in the various education systems and work. Surface differences in values can be highlighted by orientation programs, information booklets etc and often resolved through adaptation or compromise, but deep differences are more difficult to recognize and address.

To bring many of the value and cultural differences into sharper focus in HK, a range of data collection techniques were used. These provided information not only on teacher values and learner orientations and strategies, but a range of areas where conflicts could arise in this offshore setting. Valsiner, Brousseau, Hofstede's theories were then used to attempt to clarify and explain the conflicts.

**Research design and method**

Most of the data collection took place over a one-week period in Hong Kong in a preparatory program of 23 students and three teachers. James (not his real name) was the mathematics teacher and it is his case that will be highlighted here. He is a 34 year old from Hong Kong who had studied a Bachelor degree from a Canadian university. After teaching Microsoft courses part time, he obtained a teaching certificate. He is currently studying an MBA with an Australian university.

There were eight lesson observations (researcher observer) in all four courses (partially audio recorded); pre and post-lesson semi structured interviews of teachers; teacher values questionnaire (Seah, 2002); teacher marking of student written work;

student questionnaires (Biggs Student Process Questionnaire (SPQ, 1987) and background); SPQ questionnaire given to HK teachers and Australian moderators on their perceptions of students answers to the SPQ; other documents as necessary (Education Department approval forms; contracts etc); and two informal interviews with administrators of the program There was one focus group of students but will not be used because of ethical issues. Parent interviews were also sought but only one parent was informally interviewed. A follow up email questionnaire/interview to teachers was undertaken to validate teachers' comments and provide further information to saturate the categories (Creswell, 1998, p. 56).

After quantitative analysis of the SPQ data, the rest of the data were then analyzed following Creswell (1998) analysis and interpretation (pp. 191-195). Zone Theory assisted in the extraction and identification of the potential cultural conflicts from the phenomena and Hofstede was used to tentatively explain these conflicts.

## RESULTS

Several broad categories emerged from the data analysis: those related to teaching, students, curriculum, outside issues and the use of English. An example of some of these is provided below:

**Teaching issues (style):** James has been teaching this course for a number of semesters and understands he is to teach English immersed in a mathematics problem-solving environment. From his teaching it is evident he has recognized differences between what students are used to and what will be expected. He writes: 'Students stick to their teaching culture of their home country. I have to pay a lot of effort to adjust their learning style before they get to university'

**Student issues (learner orientation):** Comparing James and the students' SPQ, there were a number of items with significant differences. For example for the item: 'I restrict my study to what is specifically set as I think it is unnecessary to do anything extra' students generally disagreed with the statement (2.39 out of 5); while James thought the students would strongly agree with the statement (5 out of 5)

**Chinese/English issues:** The language issues raised were quite prevalent in most of the data sets. Comments were made about students' level of expertise. James: 'English is an international language that the students must learn irrespective of culture…but their English standard may not be good compared to the rest of the world…' A follow-up questionnaire asked how much they and the students used English, he said the students used Cantonese frequently: 90%, with each other; 70% with the teacher; and 60% in front of the class. This was also noted in the classroom observations. The issue of English in mathematics was specifically mentioned by James: 'Students are handling maths calculations quite well but they are feeling uneasy to express maths in terms of English writing/speaking. They tend to avoid elaboration on the maths answer'. English also emerged as an issue with administration and parents as they imagined a more immersion approach to teaching.

**Using Zone Theory**

By moving all the issues from the categories into the Zones of Free Movement, Proximal Development and Promoted Action, possible conflicts may emerge when the issues are too far from the current zones of the stakeholders. The following exemplifies one set of issues.

When ZFM = ZPA, a strict set of rules is set up by the teacher. Valsiner used an example of rote learning by the child who was requested to repeat exactly the material the teacher provided and not allowed to do anything else as an illustration of this (1997:196). The following is a description of an observed part of a mathematics lesson. In the set curriculum, the students self-pace through a series of mathematics modules with quizzes at the end of each module. Students sit for a quiz when they feel they are ready (with some negotiation with the teacher). Hence in a typical class, students may be doing exercises, reading, helping or being helped or completing quizzes. In HK the format was rather different. The following is an excerpt from observation notes and transcripts. The mathematics in the two of the modules studied (4A and 4B) were on basic statistics (class from 9 – 11 am):

| 9.12 | At the beginning of the lesson the teacher sets questions from the book for the students to do [so not self-paced].<br><br>James: 'Today we do practical exercises as normal and test in the second hour. Before we do 4B are there any questions in 4A?… good….I will go into a group and help you…so please go' (claps hands). |
|---|---|
| 9.15 | Students then work by themselves doing exercises, sometimes speaking to the person nearby. Teacher walks around room explaining where necessary. Some of the students have actually successfully completed these tasks in a previous semester but since the curriculum asks them to do these quizzes, the teacher has set these tasks for all the class. Some students appear to be ready to do the tests, so are doing little….. |
| 10.20 | James: 'Remove everything from the desk except the calculator, pencils and student id, your HK id is OK as well'.<br><br>The teacher then distributes several versions of the quizzes randomly.<br><br>James: 'Don't turn over the page until all students get a copy'…<br><br>The students then do the test together and finish altogether…some students have finished early, but have little choice but to sit and wait to the end of class. |
| 11.05 | Observer to James after class: 'If they finish early they look over the test. Why not get them to do the test when they are ready to leave when they think they are finished? They could even do the next test if they give you advanced notice so they have the option to finish the modules early' [as practised in Australia]. |

James: 'Students prefer it this way. Parents prefer it this way. If they leave early parents will want to know why they are not in class. They are paying for this. Students prefer to do it all at the same time. What would they do? As it is not a university where would they go?…another class at 11.30'

Here the ZPA has been set up by the teacher from previous environments and are influenced by the perceived ZPA of the parents. Hence the ZFM of the students are narrowly defined by the ZPA. Students start and finish at the same time and have to do these tasks even if they know it already. To the curriculum designers, it appears the restriction of the ZFM impedes the aim of independent learning, but for the teacher this needs to be sacrificed for more important considerations, which may be part of more deeply held cultural values. In the questionnaire James did not think the outlooks he promoted or responses to cultural value conflicts that arise, are influenced by the society and culture he is teaching in, but rather, are guided by parents concerns and his personal values as he stated: 'my teaching style is driven by my character'. He did, however, acknowledge that he had to adjust his 'teaching style to include more group discussion (evident in class observations) and self-paced activities rather than purely lecture style in order to build up their self-learning ability'. The conflict may be due to the interaction of Hofstede's power difference and uncertainty avoidance. While there may be a high power difference between the teachers and the HK administration, a low power difference is expected between the teachers and the university. Moreover the weaker uncertainty avoidance of the teachers in HK compared to the Australians may mean the HK teachers will change things and not inform the Australian teachers who want the communication with HK teachers. This resulting conflict needs to be resolved to maximize course success.

## CONCLUSION

The aim of this paper was not to highlight all conflicts that exist (although the whole study does this) but to investigate the usefulness of the sociocultural framework to examine conflicts. The ethnographic approach to the study established the themes and categories of concern. Once established, Zone Theory helped to unravel each phenomenon with Hofstede's work giving possible insights into reasons for conflict.

The emerging themes of teaching, student, curriculum issues, outside influences and use of English, would not be surprising to anyone working in the field. However the way these are investigated through Zone Theory and cultural dimensions may provide a framework to approach different cultural settings. In taking such an approach, I realize the generalizations that may occur, especially in Hofstede's approach, and the basically etic approach to the research i.e. the theory and instruments used originate from one culture and used on another, may skew the data. It is hoped in the future a more collaborative approach can be taken. I also realise that some questionnaires may have been more appropriate than others. For example in the future a combination of the Biggs and other questionnaires may give more insight

into the students and teacher perceptions. A version of the Hofstede questionnaire may give more insight into the cultural values and perceptions of these values.

The value of the study is for the stakeholders themselves. It allowed the teachers in Australia and HK to become more aware of the similarities and differences; brought forward issues that may be addressed in future curriculum changes, contract documents and ongoing communication; and provide a framework for future studies.

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