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## Prospects of Cosmopolitan Classrooms within a Malaysian University

Jamiah Baba

*Universiti Teknologi MARA*

David Beckett

*The University of Melbourne*

*E-mail address: Dr Jamiah Baba/FPEND17/UiTm@UiTM*

### ABSTRACT

*This paper examines lecturers' practices in adult teaching and learning in University X. We use this analysis to think about better learning for adults in a cosmopolitan world. In our fieldwork, teaching is viewed as "a complex set of relational exchanges between heterogeneous and differentially positioned human subjects" (Luke, 2004, p. 1429), and how these can be fruitfully accommodated in the classrooms by facilitation of understandings of each others' circumstances. We show aspects of universality and shared values that Appiah (2006) advocates in his notion of Cosmopolitanism. We claim that in teaching Malaysian adults, lecturers need to recognise and can build upon the cosmopolitan nature of the pedagogical relationships formed within their classrooms.*

**Keywords:** *cosmopolitan classrooms; university teaching and learning; teaching and learning practices; adult learners; higher education*

## INTRODUCTION

Why is real diversity in learning and teaching important – perhaps even more important than as expressed as a simple binary between ‘Eastern’ or ‘Western’ ways of learning and teaching? Our approach to answering this question is to take seriously what we all, as human beings have in common – not just what Easterners or Westerners have, or can learn from each other.

Attention to real diversity – not just a binary - requires consideration of what is called ‘cosmopolitanism’ (Luke (2005) has several references to this in language and literacy scholarship). Cosmopolitanism invites educators to not just acknowledge but to move beyond the parochial and to do so without, at the same time, succumbing to the universalities of (Western) ‘globalisation’ as a – no, as ‘the’ - grand narrative for learning. Kwame Anthony Appiah, in his *Ethics of Identity* (2005), sets out the need for ‘cosmopolitan conversations’, as follows (2005, pp. 267-8, italics added):

The roots of the cosmopolitanism I am defending are liberal: and they are responsive to liberalism’s insistence on human dignity. It has never been easy to say what this entails...I would insist, again, that the individual whose self-creation is being valued, is not, in the justly censorious sense of the term, individualist. Nothing I have said is inconsistent with the recognition of *the many ways in which we human beings are naturally and inevitably social*. First, because we are incapable of developing on our own, we need human nurture, moral and intellectual education, practice with language, if we are develop into full persons. This is a sociality of mutual dependence. Second, because we desire relationship with others: friends, lovers, parents, children, the wider family, colleagues, and neighbours. This is sociality as an end. And third, because many other things we value – literature and the arts, the whole world of culture; education; money; and in the modern world, food and housing – depend essentially on society for their production. This is instrumental sociality....

This picture...acknowledges that identity is at the heart of human life...But the cosmopolitan impulse is central to this

view, too, because it sees a world of cultural and social variety as a precondition for the self-creation that is at the heart of a meaningful human life. Let me be clear. *Cosmopolitanism values human variety for what it makes possible for human agency*, and some kinds of cultural variety constrain more than they enable... But the fundamental idea that every society should respect human dignity and personal autonomy is more basic than the cosmopolitan love of variety; indeed...it is the autonomy that variety enables that is its fundamental justification.

Teaching in diverse ways – for ‘variety’ – is, then, the way autonomy (choices made in classrooms about worthwhile learning and teaching, in this case) is best advanced.

When students are exposed to diverse ways of learning and teaching, they build their own capacity for self-direction. This growth in autonomy or self-direction is how identities are constructed and re-constructed, in classrooms, *anywhere in the world*. We claim then that cosmopolitanism provides both an epistemic and an ethical basis for the pedagogical innovations now underway in some of our universities and in particular, in one Malaysian university, which is the site of the fieldwork we now report.

This paper is part of a larger project undertaken in a public university in Malaysia. It examines the practices of the lecturers in the teaching and learning of adults who have turned to higher education for training and retraining. It takes seriously and indeed in the data stories below shows, in Appiah’s words, “the many ways in which we human beings are naturally and inevitably social” (2005, p. 267).

This sociality plays out in the enacting of the lecturers’ professional knowledge, experience and expertise and the demands of teaching and learning that they face that provides rich insights into pedagogical practices that are unique to University X. We then use this analysis to think about lecturers’ leadership and teaching styles in creating better educational opportunities for adult learners in a cosmopolitan world.

## **METHODOLOGY**

The project was a multiple-case study that focused on four undergraduate programs and one postgraduate (diploma) program. The five programs are labelled Program A – Accountancy (working part-time learners), Program B – Teaching of English as a Second Language (in-service teachers), Program C – Educational Management (in-service headmasters), Program D – Teaching of English as a Second Language (pre-service teachers), and Program E – Information Management (working part-time learners).

The study involved ten lecturers and three distinct groups of learners, based on their age and experiences. There were two lecturers of each programme, giving a total of ten respondents. They fulfil the criterion of having taught the respective programme for at least two years. The learner spread across Programs A – E included those who:

1. were entrenched in their profession and looking for opportunities to improve their practice (e.g. in-service headmasters – Program C),
2. those who were undergoing a career change (e.g. pre-service teachers – Program D), and
3. those who were looking for better qualifications, thus, potential promotions and better emolument (e.g. in-service teachers and working part-time learners – Programs A & E).

The findings were derived from (individual and group) interviews and classroom observations conducted during a four-month fieldwork timeframe. Interviewing was the main strategy for data collection. Bell (2005) argues that interviews are used to probe ideas and feelings, and particularly useful in providing information that a written response would conceal, and are useful to capture data that are “based on emotions, experiences and feelings” (Denscombe, 2003, p. 165). In the study, interviews were used to gather descriptive data in the respondents’ own words so that we could develop insights into how pedagogical practices in University X were enacted. The interviews with the learners were semi-structured and conducted either individually, in pairs or as a group of four. The lecturers were each interviewed individually. The observations took place in the classes of the two lecturers of each programme.

In this study, observation was used to examine what actually transpired in the classrooms. This is because observation is fundamental to discovering “whether people do what they say they do, or behave in the way they claim to behave” (Bell, 2005, p. 184) and it involves observing what actually occurs as it naturally happens in real-life situations (Denscombe, 2003). The observations were also used as an alternate source of data for cross-checking against the information gathered through the interviews.

The teaching and learning process in each session were video-recorded with consent obtained from the lecturers and the learners. Classroom observation of each lecturer took place at least twice and each observation lasted from one to three periods of lessons (each period lasted for about 50 to 60 minutes). The classroom observation was unstructured, focusing on lecturer-learner interactions deemed significant to the research questions. Data gathered from the interviews with the lecturers were used to inform and/or modify the focus of each classroom observation.

## **FINDINGS AND DISCUSSION**

Cosmopolitanism was apparent right from the start. We found that coming from different backgrounds and/or similar experiences, the learners formed relationships with each other within their classrooms in order to meet the academic demands of the programmes. These relationships brought forth different learning outcomes which benefitted as well as challenged both the lecturers and learners. We also outlined particularly meaningful learning opportunities which could further develop these relationships. In these ways, real diversity was shown to emerge in the quality of the interactions between and amongst adult learners in those five Programs in this University and between the learners and their lecturers. How did this occur? The evidence is presented in the following three sections.

### **Classroom Teaching and Learning Strategies**

The findings show a variety of teaching techniques was utilised to ensure learner participation. As the lecturers recognised that adult learners are more mature and have accumulated more life/work experiences, classroom discussion was viewed as an ideal teaching and learning practice

as it encourages learners to help each other and share what they have experienced at work and/or in life with others.

The lecturers emphasised the need to make connections between real-life practice and theoretical knowledge. One strategy was to encourage learners to share their knowledge and experience, which was mainly done through questioning. The learners were generally receptive to this approach. As one headmaster observed:

*You have seen it yourself when our lecturer quote one sentence and we responded many, many times. But the lecturers are all very kind and they accepted whatever we responded. Among us, we have different views but I liked the way the lecturers entertain us.*

Similarly, the in-service teachers (Program B), as perceived by the lecturers, were able to bring different perspectives into their classes and enrich the school leavers' (mainstream student population) learning experiences. However, in the classes of Programs A, D and E, these activities were not always successful as the lecturers needed to use more prompts which were often met with silence. When this happened, they had to instantaneously modify their teaching strategies, either by providing more examples or elaborating their points.

Another strategy adopted was to relate theories to learners' experiences and encourage them to reflect on the theories in their practice. There is evidence that suggests this technique was fruitful in the headmasters' class (Program C). One headmaster's remark was noteworthy:

*in University X they teach us how to do it and at the same time how to implement it. [...] What happens in our class actually happens in the school as well, the true situation. What they teach us is actually the real thing that we need.*

Nonetheless, some practices were more successful with the headmasters because they shared common goals, problems, and experiences. The group's homogeneity was predetermined, so it was more difficult to replicate with learners from widely-divergent backgrounds.

It was difficult to employ similar strategies with the pre-service teachers (Program D) who lacked teaching experience. Nevertheless, task-based exercises were used to allow them to practise their skills based on given rules and principles. In Program E, with working adults studying Accountancy, we saw a slightly different approach. Although the lecturers admitted that the students had more experience compared to the school leavers, they were rarely encouraged to express their opinions and/or share their experiences. More often than not, their responses followed the lecturer's prompts instead of personal accounts of their practices and/or experiences. They were not challenged to examine how their learning experiences had affected them and the way they worked.

Group work was often introduced early, which allowed learners to get used to the idea of working as a group. Three examples of group work are highlighted here.

The first example is the field trip organised by the headmasters. The lecturer carefully thought of it, monitored its progress and consciously placed herself as a facilitator. For the learners, the trip had been a collective effort, with each individual working on specific tasks. They relied on each other and each other's judgements on how to best execute their plan. Because the trip was a success, both parties appreciated its educational values.

The second example is the learners' project in Program E. Unlike the headmasters' field trip, the group project was a major part of the course (100% coursework). The learners had to develop a simulated system and produce weekly progress reports, a manual and a final report. As they had some prior knowledge and experience of the subject matter, the approach was well received. Furthermore, the project gave them greater autonomy to direct their learning and the flexibility of time. The learners had also shown the ability to work as a team with minimal supervision. However, they were not as engaged as the in-service headmasters because their participation was constrained by full-time work and family commitments.

The third example is the group presentation in one of the Program A classes. The learners were asked to do a presentation on a topic in the syllabus. Despite being able to present the topics, they were not able to answer the lecturers' questions on what they had presented. The lecturer's

remark, “sometimes they do not understand what they are presenting; they just read from the slides” suggests that learning which was planned to be learner-centred failed to engage them in learning. As a result, the lecturer had to provide the necessary information which led to a concentration of teacher-centred method.

The findings also showed that presentation was a common teaching and learning strategy. The effective use of student presentations; however, depended very much on the learners’ group dynamics, and how the presented content was exploited to facilitate further understanding. In the headmasters’ class, a robust information-sharing atmosphere was created when a few participants contributed their ideas during a presentation. This suggests learning occurred at both personal (the presenter presenting her ideas and individual audience listening to her) and collective levels (mutual sharing between the presenter and audience). More interestingly, learning here was both embedded and explicit. Learning was ‘doing’ the presentation and the discussion, while understanding could be distinctly gauged from the ideas contributed.

Nevertheless, there were instances in which presentations failed to facilitate learning. In Program D classes, the pre-service teachers were preoccupied with fulfilling the assessment requirements. Like the Program A presenters, they relied heavily on their prepared texts/slides. The audience, on the other hand, was less interested to listen and understand what was presented. Although there were instances of lecturer intervention, learning if any, was minimal, isolated and individualistic.

Overuse of presentations can bore learners and diminish its effectiveness as a teaching and learning tool. In situations where presentations are part of the assessments, lecturers need to monitor learners’ reactions and intervene accordingly. There is evidence to suggest that lecturers’ intervention during presentations helped learners to learn in a more meaningful manner. In one class of Program C, the class’ attention was redirected to the presentation when the lecturer asked questions. The presentation then turned into a discussion in which the presenter and the audience tried to provide appropriate answers to the questions. Evidently, lecturers hold the responsibility and leadership for the quality of learning in their classrooms.

As there were different assessment types, different aspects of learning were therefore emphasised. In project-based assessments, like the field trip and system development (project), the lecturers' focus was on facilitating and providing timely guidance. In courses which had final examinations, they were concerned about the learners passing the subjects as we are reminded by a remark:

*At the end of the day it's not me going for the exam, [it is] the students [who are] going to the exam and the way some of them are doing the test makes me worried.*

Therefore, it is not surprising to find instances in which the lecturers provided tips to answer questions or possible topics in the final examinations. Some went further, as admitted by one, "(I do) analysis of past year's questions so that they can focus on which topics to be emphasised during the exam." We argue that the emphasis on examinations could lead to superficial, short-term learning which could hinder learners' professional development. In fact, this was supported by the learners who were undergoing a career change. As one suggested, "Project papers, case studies, problem-based tasks, and observations in schools instead of final examinations... would be more helpful".

Cosmopolitanism can be strongly supported by a common language. English is the medium of instruction in University X. The findings reveal that there were mixed reactions to its use. In the TESL programmes (Programs B and D), using English was a given as the learners were training/retraining to be English teachers. English was primarily used and in fact, some lecturers incidentally reinforced the language in their classrooms. The in-service teachers valued the opportunity to use more English, both within and outside the classrooms. The pre-service teachers, although anxious about using English were concerned about not learning it and about not having more linguistic knowledge. Unlike the other learners, these learners' ability to use English went beyond academic competence as it became an important professional competence (to teach English to secondary school students).

In Program C, the lecturers believed English was a major stumbling block to the headmasters' academic success. They admitted the learners would not be able to understand the materials if they could not understand

English. Although learners' English language ability was not discussed by the lecturers in the other two programs (A and E), some learners revealed that their academic undertaking was compounded by difficulty with English, particularly academic English.

In most cases, the lecturers tried to accommodate the learners' diversity of facility with English by maintaining a bilingual (Malay/English) classroom, which was perceived to be necessary to encourage participation and aid understanding. Although the slides were prepared in English, both English and Malay were used interchangeably to explain concepts and to interact. Often, Malay translation was used to explain unfamiliar concepts. Not surprisingly, most learners preferred to use Malay when articulating their thoughts. In addition, some lecturers even allowed the learners to write their assignments in Malay instead of English if they requested to do so. Although these practices might contradict the institutional policy, they could be used to advocate developing appropriate teaching and learning practices for adult learners.

The learners; however, had different perspectives on the use of English as a medium of instruction. Some learners did not face any problems while some found it difficult to expand their ideas if they did not have enough vocabulary. Nonetheless, those who viewed using English was difficult chose to take it positively. To them, using English was beneficial as it provided them with (perceived) heightened self-esteem and language skill. As such, some learners recommended that the lecturers should use the language all the time and encourage their learners to use it. These findings suggest varying learner needs which have to be carefully considered by the lecturers in the enactment of their lessons. Again, this requires them to be sensitive to the contextuality of their practice and to develop an ongoing capacity to learn from their experiences (Beckett & Hager, 2002).

### **Lecturers' Professional Practices**

The findings suggest the contexts within which the lecturers found themselves required them to seek diverse means of teaching and dealing with the learners. In other words, the lecturers' conceptions of teaching and teaching approaches were constantly modified by their everyday practice. Significantly, these affirm what literature says about how contextuality

influences and shapes the practice of a practitioner (Beckett, 2008; Beckett & Hager, 2002).

The findings reveal that the lecturers had a repertoire of ways to ‘do’ flexibility, particularly those that concern the teaching/learning activities. Two situations are illustrated here.

The first is a lecturer in Program B who faced a disconcerting situation when the learners came unprepared to class. Although she had planned to review their lesson plans, she gave them extra time during the lesson to complete the task which she had assigned a week earlier. Her flexibility resulted in the learners’ learning and sharing their knowledge.

The second is a lecturer in Program E whose subject included several weeks of lectures and the learners’ developing a simulated information system for the rest of the semester. In itself, the subject provided the learners with some form of flexibility. Moreover, the lecturer created opportunities for them to discuss their project during the weekly meetings.

Another aspect of flexibility is that it has to be cognisant of whose needs it is serving. One lecturer displayed her flexibility by allowing a learner to be absent from her class; an “academically difficult” decision because of his other life commitments. Her remark, “they bring their life into the classroom and we have to find ways to handle it, to get over or around these issues” showed her understanding of the learners’ complex situations. In fact, her adjustment, unlike the one in Program A (see next), was more personal and required sensitivity to individual learners’ needs. This is consistent with what Kasworm, Polson and Fishball (2002, p. 27) have suggested:

*To serve adult learners thoughtfully, educators first need to understand that adult students come from a different place, with different needs, and with concerns that are both similar and different from those of younger students.*

However, it is also important to note that the lecturers’ flexibility was enhanced by their positive perception of the learners. This suggests that the lecturers needed to see their flexibility was reciprocally appreciated by the learners by actively engaging in learning.

There is evidence that suggests the lecturers reflected on the situations they encountered in their everyday practice. They were able to ‘read’ the learners’ actions/reactions and to make instantaneous decisions or ‘practical judgements’ in situations that were unfolding in their classrooms. Schön’s (1983) distinction between reflection-on-action and reflection-in-action provides us with a clearer view of how reflective thinking informs our present and future actions. Both are crucial to a lecturer’s practice.

In Program A, a lecturer faced what Schön (1983) calls a ‘non-routine’. She decided to proceed with scheduled presentations even though only half of the class was present. Four learners presented while two remained in the audience. The session turned out to be an interactive one, with the learners cordially learning from each other. Evidently, the lecturer had made the right judgement, that is, instead of waiting for the rest to come, she had asked the learners to proceed with the presentations. Another ‘non routine’ or ‘hot action’ (Beckett, 2008; Beckett & Hager, 2002) was observed in a lecturer’s class in Program B. Her learners had not prepared what was asked of them (individual lesson plans). Instead, she asked them to work in groups to produce a lesson plan each. Because of her decision, active learning took place and her objectives were achieved.

A lecturer in Program D decided to continue with a discussion despite noisy disruptions from renovation work. His practical judgement not only saved time but also led to an active sharing of ideas by the learners. Evidently, these lecturers displayed ‘in-the-moment’ decisions they made as they encountered disruptions to their lessons.

In Schön’s (1983) term, their reflection-in-action had informed their current actions. Although their reflective thinking was immediately helpful to the situations unfolding in their classroom, the way they had intellectually judged the situations was also useful in their future practice. In this way, it will add to their repertoire of anticipative actions in the everyday ‘hot action’ (Beckett, 2008; Beckett & Hager, 2002) of their practice.

A less ‘hot’ action occurred in another lecturer’s class in Program A. After a 45-minute break, he retracted an example. Although needing less immediate attention than the situations above (after a prolonged break), knowing that a future action was needed (to retract), he did what was

necessary (retracted) to aid understanding. In this way, his reflective activity did not only inform his future action (after the break) but also had an effect on the present (in the same lesson).

Added to these practices, there are instances that point to reflection-on-action activities which informed the lecturers' practices. Evidently, after some involvement in teaching the same groups of learners, the lecturers modified their teaching approaches and methods. This finding is consistent with the argument that skills and performances are extensive, diverse, and shaped by the workplace activities, norms and values (Billett, 2001).

### **Learners' Engagement**

All humans are unique and those beyond school age should be regarded as adult learners having a range of necessary experiences which can be useful resources for learning (Merriam & Grace, 2011; Rogers, 2002; Merriam & Caffarella, 1999; Brookfield, 1986; Knowles, 1984). Educators are frequently urged to encourage adult learners to share their experiences and to relate new materials to their experiences (Rogers, 2002) and our findings support this. Cosmopolitanism endorses this variety in which the roles learners play cannot be ignored. Nixon (1996, p. 10, emphasis added) discovered that university teachers viewed learning "not as something that happens to students, but as something that they themselves must make happen".

Learners are agentive; they increasingly want to take responsibility for their learning but as our fieldwork has shown, lecturers need to provide structured and sensitive scaffolding for this individual agency to develop within classroom groupings such as in our five Programs.

The learners' development of agency was enhanced through creative teaching and learning approaches such as the field trip in Program C. They engaged actively in learning when they wanted to construct understanding, share experience and voice learning needs. The real life examples that they brought into the classrooms enriched the learning experiences of other students.

Furthermore, they were receptive to learning from each other and there was a culture of mutuality. However, they were also observed to engage

differently in different pedagogical contexts, from being actively engaged to deciding not to engage in learning. Some learners perceived there were 'right' answers instead of appropriate answers. Interestingly, assessed and non-assessed forms of learning activities affected learners' engagement to varying degrees. For instance, we see them more engaged when doing assessed presentations in contrast to responding to queries which the lecturers posed to gauge their understanding.

The findings also indicate that the pre-service teachers were unable to produce the expected learning outcomes. As one lecturer commented, "They were very passive in class," and "highly dependent on the textbook". Upon this discovery, the lecturers had to adjust their teaching and learning methods, as described earlier. In Program C, the learners perceived the lecturers had adapted to their learning styles. As one learner put it, "Most of the lecturers have learned as well from us how to teach us". This finding suggests that such skills require lengthy involvement with the learners' teaching and learning and conscious decisionality over time.

The tendency to learn as a group (in the classroom) was more prominent in homogenous groups, like the headmasters (defined by experiences) and the pre-service teachers (defined by lack of experiences). The headmasters answered in a collective manner, almost in a chorus, which is surprising given that they were older and very experienced. However, they were able to respond individually and provide relevant examples to discussions that required them to relate their experiences. With the pre-service teachers, the collective answering indicates that by choosing not to respond individually, they gained some anonymity when faced with theory-laden questions. This anonymity prevented them from 'losing face' or from potential embarrassment when the questions were perceived to warrant 'the right answers'.

The learners liked the idea of sharing their knowledge and experiences. The headmasters, in particular, were very keen to engage in such a manner. In Program B classes, the in-service teachers were willing to contribute to each other's learning, particularly the younger school leavers in understanding the nature of teaching in schools. More interestingly, they also interacted with the lecturers in small group discussions. The pre-service teachers were able to participate actively in discussions that required them to provide

appropriate answers based on their experiences, in which the pressure to offer the 'right' answers was eliminated.

In the classes of Programs A and E, most of the time, the learners remained quiet or murmured their guesses to the lecturers' questions. Because the discussions were curbed by their willingness/ability to participate, the lecturers had to continue by providing examples. Nonetheless, there were instances in which the learners were able to provide valuable input to the lecturers' queries and participate in discussions.

Evidently, there was a culture of mutuality that promoted better understanding and more meaningful learning between the lecturers and adult learners. The adult learners displayed receptivity to sharing knowledge and experiences, and to accepting new ideas that could enhance their professional abilities. These attributes were reinforced by the lecturers' acknowledging and valuing their knowledge and experiences. Furthermore, they valued working in a team, particularly the learners in Program E. They found this arrangement advantageous, as one learner said:

*If we don't have teamwork, then we cannot do all the assignments that are given to us. If we have teamwork, it is easier for us. Maybe we can divide the project or assignment into two parts, and there is a division of work among us. So we communicate with each other and update each other on what we have done.*

In most classes, when the lecturers asked, "Are there any questions?" or "Do you understand?" the likelihood was that nobody would respond. Nonetheless, the learners were observed to be capable of asking questions or seeking clarification to enhance understanding. Interestingly, in the classes of Program D, the learners displayed confidence and commitment when asking about, and doing assessments. This pattern of engagement, although visible in other classes, was not as prominent. This might indicate the learners perceived assessments as crucial to their academic success. Therefore, it is hardly surprising that they often ignored other non-assessed forms of learning such as active listening during presentations and/or making queries after.

In the part-time programmes, there were instances in which the learners decided not to engage in learning. Given their part-time enrolment, they often had to miss classes due to work related reasons. The findings show that the learners' attendance and punctuality often affected the teaching and learning activities. Moreover, some learners, like those in Program E admitted to finding it unproblematic if they were to miss a few classes. It was hardly surprising therefore to see lack of seriousness in attending classes, as claimed by the lecturers.

More interestingly, the learners displayed different kinds of behaviours in different pedagogical contexts. For instance, during a group presentation in one of Program A classes, we saw some learners displaying lack of sensitivity to what was on going in the class (some were talking, some were texting on their phones). Another interesting display of (non) engagement was when Program E learners, instead of discussing their project, decided to leave when their lecture was cancelled. This is interesting as the lecturer had specifically asked them to remain in the class and discuss their project.

The findings indicate that the patterns of learner engagement vary in different pedagogical contexts. Here, it is worthwhile to emphasise that individuals "exercise their person dependence when deciding which problems they will engage in and the degree of engagement" (Billett, 2006, p. 55). Evidently, although the learners were willing to be instructed and were capable of accomplishing what was required, they exercised their judgements on the depth and nature of their engagement. Nixon (1996) argues learning, conceptualised in the way that learners themselves must make happen, indicates that learner motivation becomes a major pedagogical concern. Therefore, learners must be encouraged to take an active role in learning through more pedagogically effective, interesting and meaningful instructions.

Rogers (2002) argues that adults deliberately construct themselves as a 'student' when pursuing learning intentionally. Essentially, this implies a willingness to work under guidance. A headmaster's remark suggests that this could also be true for the learners in the study:

*We have to ask them, we have to discuss and sometimes we bring our experience in the school to the discussion, and ask*

*our lecturers of their opinion. They have a lot of experience and sometimes their knowledge is useful compared to us because we get our knowledge from experience but they get their knowledge from their study.*

According to Rogers (2002), the basis of this personalised construction is both general (the cultural climate of their social context) and individual (their personal experience of other forms of education). Moreover, the role involves some (temporary) abandonment of autonomy and a willingness to accept direction in order to achieve a (normally self-set) goal.

In Program B, as the in-service teachers were playing a dual role (as learners and experienced teachers who could enhance understanding of teaching English in schools), autonomy was described as having more freedom in deciding when and what to do. As one learner commented, “I expect them to treat us to treat us like autonomous learners, we are totally independent and not to rely too much on them”. This autonomy may indicate some form of self-directed learning advanced by Knowles (1975) but the learners did not, as Brookfield (1986, p. 111) puts it, “assume a degree of responsibility for designing their curriculum, negotiating their assessed piece of work, and judging the worth of their efforts”. In his study, he found adult learners were uncomfortable with being required to assume this responsibility. Citing Chené (1983), Brookfield (1986, p. 57) asserts that “autonomy is possible only when learners have an awareness of the process of learning, an appreciation of the norms governing the standards and activities in the area explored, and an ability to make critical judgments on the basis of this knowledge.” As to be expected, autonomy and even its voluntary but temporary surrender, is a key aspect of a cosmopolitan identity: a willingness to take responsibility for oneself in a fast-moving, social and globalising world.

Interestingly, the findings suggest that the headmasters were able to assert this kind of autonomy. This is hardly surprising as they are experienced teachers and school managers. In the observation, we saw how they actively participated; sharing experiences and expressing opinions. They successfully planned and executed a field trip which they found educationally enriching. They were also able, after discussing with the Coordinator, to change their packed schedules and initiate changes to a Law subject which they found

difficult and irrelevant in the school context. In these instances, although they consciously positioned themselves as students of University X (abandonment of autonomy and a willingness to accept direction), they were able to affect (assuming responsibility) positive changes to their learning experiences (achieving goals).

Program E learners had a different experience. Like the headmasters, they were willing to work under guidance and able to accept direction, as we have seen in their group discussion. However, there is evidence that suggests they assumed independence which expressed separateness from the course/formal learning. For example, when their lecture was cancelled and they were asked to discuss their project (unsupervised), they unanimously decided to leave. Probably sensing this inclination, the lecturer had previously set some boundaries and reminded them of their responsibilities to the project. In another class, although two learners were able to present what was asked of them (willingness to accept direction), they were late, and were blasé about it. Given this, it is therefore, hardly surprising to find that some lecturers were cautious when dealing with them.

For beginning teachers like the learners in Program D, autonomy can be threatening. Unlike the other learners (Programs A, B, C & E) whose accumulation of life and work experiences could provide them with the ability to take increasing responsibility for their learning, they lacked the ability to diagnose their learning needs, formulate learning goals and evaluate learning outcomes. Therefore, they relied heavily on the lecturers to interpret theories and concepts that could provide them with the found knowledge of becoming teachers. Didactic methods were preferred as they were perceived to provide clarity and understanding through structure, authorised knowledge and application. Only at the end of the programme (during their practical teaching in schools), they discovered their formal learning had been inadequate in preparing them for future work. At this time, it was too late for them to assert autonomy over the direction of their learning.

## CONCLUSION

We have shown that cosmopolitanism plays out in detailed pedagogical ways in university classrooms where respect for diversity is uppermost, and where the sociality of learning and teaching is preserved.

In particular, we have shown this diversity and sociality through the following powerful classroom teaching and learning strategies: classroom discussion, relating theories to learners' experiences, giving task-based exercises, group work, lecturers' prompts, field trip, project, group presentation, lecturers' intervention, different assessment types and common language. Similarly there are lecturers' professional practices which contribute to powerful learning: repertoire of ways to 'do' flexibility such as extra time, opportunities for learners to discuss their project and sensitivity to individual learners' needs; making instantaneous decisions or 'practical judgements'. Finally, the quality of the learners' engagement has a large contribution to make to the power of the cosmopolitan classroom: giving real life examples, learning from each other, responding to assessed and non-assessed forms of learning activities, answering in a collective manner, small group discussions, providing examples, capable of asking questions or seeking clarification, attendance and punctuality, work under guidance and assuming independence.

We claim that it will be these sorts of initiatives which will enliven and reshape university pedagogical experiences throughout the world, and that staying with a binary East-West distinction, no matter how extensively it is cross-pollinated, is an insufficient basis for the way lifelong learning and professional formation are best undertaken.

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## Disseminating Effective Use of Mapping Techniques in Integral Calculus

Nor Hazizah Julaihi

Voon Li Li

Tang Howe Eng

Universiti Teknologi MARA Sarawak

E-mail address: norhazizah@sarawak.uitm.edu.my

### ABSTRACT

*Integral Calculus has always been an issue to first year Engineering students in their Calculus courses in higher learning institutions. This paper studied mapping techniques in learning Integral Calculus. Fifty-three randomly selected first year Engineering respondents were asked to sit for a pre-test, then exposed to a treatment and finally sat for a post-test. The findings showed that there was a significantly higher mean of post-test scores as compared to the mean of pre-test scores after the application of Integral Maps in their learning. The findings indicated that the mapping techniques had a positive effect on the respondents. The respondents were fascinated with the applied bright colours in the maps. They were also fast in working out solutions as they exploited the layering design of the maps. All of the respondents would use or recommend the maps to their friends. The findings indicate that mapping techniques have potential for applications in the teaching and learning of Integral Calculus.*

**Keywords:** *integral calculus, mapping techniques, effectiveness, techniques of integration*

## **INTRODUCTION**

Integral Calculus has always been an issue to a substantial number of first year Engineering students. According to Tang et al. (2008), this issue started with the identification of the correct integration techniques out of many different techniques. This is further compounded by students' poor understanding of Integral Calculus due to lack of prior knowledge. As postulated by Yudariah and Roselainy (2001), students who do not have a solid foundation of Basic Calculus from secondary schools struggle to learn the new materials in the first year of Calculus courses in higher learning institutions. They easily lose their confidence and are overwhelmed when they attempt to solve Calculus word problems.

Salleh and Zakaria (2011) emphasise that the existing gap of Mathematics knowledge is identified as a major contributor to the decline in students' performance in Integral Calculus at the university level. This gap is due to the deterioration of Mathematics performance at secondary schools and the mismatch of teaching and learning culture between secondary schools and university. As traditional methods of teaching Mathematics have been found to be ineffective due to poor performance in certain topics of Mathematics, an innovative change needs to be implemented.

This paper proposed a Calculus procedural learning method through the application of mapping techniques, which provides an alternative way for learners to learn Integral Calculus. The mapping techniques are used because their visualization effects and the benefits of inter-knowledge correlation through procedural learning provide a rich learning experience in a simple and systematic manner for students with different abilities. As stated by Noss and Baki (1998), a lifelong and purposeful Mathematics learning can be attained only by applying both procedural and conceptual knowledge.

Three mapping techniques, i.e. mind maps, concept maps and knowledge maps in learning Integral Calculus among higher learning institutions students were initially integrated and investigated. Likewise, the Engineering students' understanding and their feedback on these techniques were also examined.

Specifically, the objectives of this paper were:

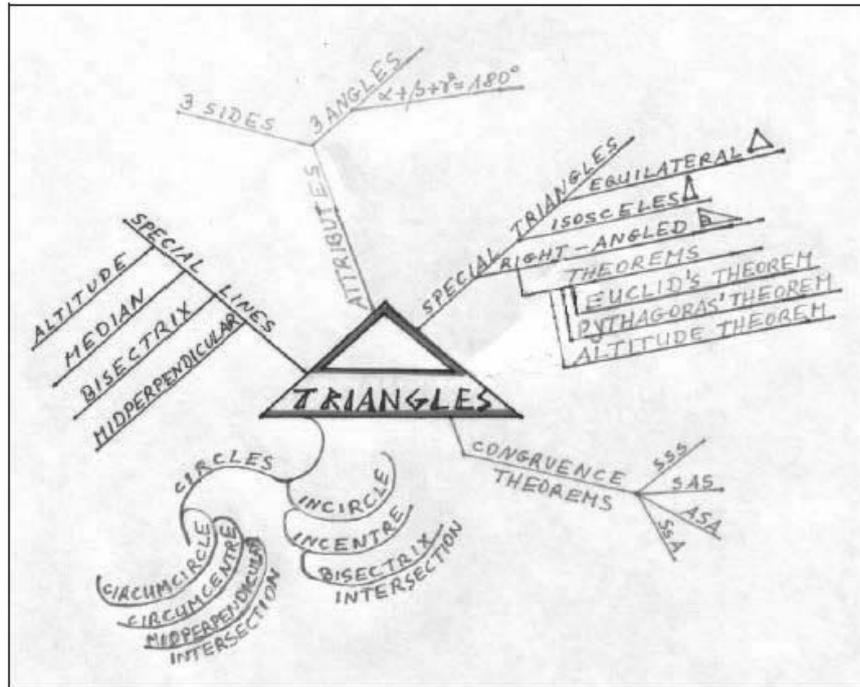
1. To compare the respondents' mean scores of achievement before and after using the mapping techniques in the learning of Integral Calculus, and
2. To investigate the respondents' perceived opinions on the use of mapping techniques in the learning of Integral Calculus.

## LITERATURE REVIEW

Educators and researchers have been studying various alternative teaching and learning approaches to minimise Engineering students' difficulties in learning Calculus and Mathematics. The advancement of computerised-based technology has seen this technology incorporated into the teaching of Mathematics across various levels of studies. Lancaster (2004) introduced a graphing calculator to his secondary school students where great success was reported as those students learned trigonometry and iteration using the calculator. Similarly, at the university level, research found that students showed enthusiasm in thinking critically as they strived to work out possible solutions to Mathematics problems in a laboratory course that integrated the handheld technology in their Mathematics education (Rosihan & Kor, 2004). Saadia (2010), meanwhile, utilized Maple software to teach selected Calculus topics with success among his Architecture students. However, he cautioned against total dependency on such programme and voiced out that students must master necessary theories, which would remain as fundamental to Mathematics knowledge. The National Council of Teachers of Mathematics (2000) has also made comparable remarks on the use of technology in Mathematics education in which they mentioned that the technology should only be used to cultivate understandings and insights and not to replace fundamental knowledge (cited in Saadia, 2010). Hence, there is a need to search, expand and develop novel techniques of Calculus learning such as mapping techniques in an era that emphasises on independence and meaningful learning as well as creativity and critical thinking.

In recent years, mind-mapping techniques have progressively been used in the area of education. Among the fields that have acknowledged the benefits are Accounting, Science and Mathematics (Chin & Norhayati, 2010; Akinoglu & Yasar, 2007; Pehkonen, 1997). Chin and Norhayati (2010) noted an increment in Accountancy students' test scores as a result of student-centered mind-mapping and this resembled the earlier findings of Akinoglu and Yasar (2007) on mind mapping and students' elevated academic achievement as well as their positive attitudes towards Science. Pehkonen (1997) also views mind-mapping as a great advantage to Mathematics students as Mathematical tasks engage both left and right hemispheres of the human brain; the left brain deduces analytically and arithmetically, and the right brain is more towards geometrical deduction.

As early as in the 1960s, Tony Buzan alerted the academic world on the idea of mind-mapping. Buzan strongly believes that one can better remember and reproduce information with the use of mind-mapping technique as the technique uses both sides of the brain (Buzan, 1976). This mental ability is made possible as the human brain is prone to capture information through visual images, i.e. colours, pictures and words more effectively as compared to the jotting of lengthy notes (Buzan, 1993). Such visualization also enables Mathematics students to create coherent procedures to solve Calculus problems (Rohani, 2010). Fortunately, an interesting, systematic and meaningful way of learning which fosters creativity is among the many benefits of mind-mapping techniques in Mathematics education as described by Brinkmann (2003). It is revealed that the topic on triangles can be learnt creatively with the aid of mind maps, which are built to resemble the structure of a tree (Figure 1).



**Figure 1: Example of Mind Mapping on the Topic of Triangles**

Concept mapping which is another type of visual representation among concepts can be non-hierarchical (Harnisch et al., 1994) or hierarchical (Novak & Cañas, 2008). In concept mapping, the concepts are circled or boxed whilst the relationships among concepts are connected along the linking lines. An illustration is Brinkmann's (2003) demonstration on the use of concept map on the topic of linear equations, which trains students to think and organize knowledge into correct structures for insightful learning (Figure 2).

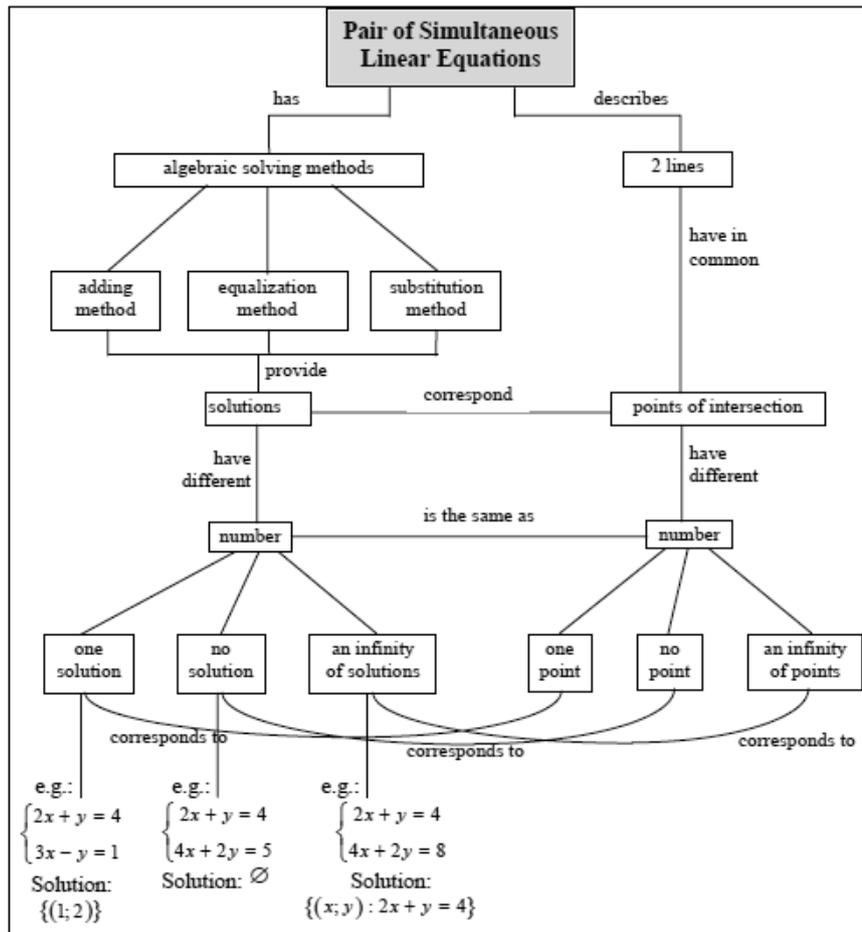


Figure 2: Example of Concept Mapping on the Topic of Linear Equations

Ausubel's learning theory states that the human brain assimilates new information based on current existing knowledge for meaningful learning. In fact, it is the basis of concept mapping which was introduced by Novak (Ausubel et al., 1986). Consequently, Williams (1998) discovered that concept mapping can be used as a tool to capture Mathematics students' understanding on functions beyond traditional text book learning. According to Flores (2009), when concept mapping is utilized in teaching Mathematics students, these students develop new ways of thinking and skills that assist

them in the problem-solving process. As both students and teacher discuss and analyse Mathematical concepts which are implicit in nature, they create an environment of meaningful and active learning.

Nevertheless, confusion is one of the limitations of mind-mapping and sometimes, it also applies in concept mapping. Mathematics students need to know in-depth the conceptual contexts in order to perform concept mapping. Knowing that this concept mapping represents knowledge (Ausubel et al., 1986), Brinkmann (2003) has merged both mind and concept mappings to produce knowledge mapping. When he used the mapping techniques to build structures in Mathematics, he noticed his Mathematics students were giving exemplified problem solutions. According to Sofronas et al. (2010), sixty-one per cent of his respondents viewed the ability to perform the integration techniques as vital in the understanding of Integral Calculus. With the use of computer and calculator technology, Orton (1983) states that many students do not have a real understanding of integration techniques. Students are rarely exposed to knowledge mapping despite its potential as a new way of teaching and learning Mathematics. This study initiates an attempt to develop mapping techniques as a novel way for university students to learn integration techniques.

## **METHODOLOGY**

This study employed an experimental design in which a randomly selected sample of Engineering respondents were initially asked to sit for a pre-test then exposed to a treatment and finally sat for a post-test after four months. This treatment consisted of the application of mapping techniques through the use of Integral Maps in solving integration problems. The Integral Maps use a specific mapping technique to help the respondents to identify the appropriate techniques of integration for solving a multitude of integral problems through unique and simple procedures.

There are many confounding factors which are threats to the validity of an experimental design. These factors include maturation, the effect of history and instrumentation. In this study, a gap of four months for conducting pre- and post- tests can serve to control the maturation of the respondents. Besides, all of the respondents experienced the same treatment

in this study, thus the effect of history can be minimized. Besides, the effect of instrumentation can be controlled because the same pre- and post- tests were used in this study.

## **Respondents**

In this study, the respondents comprised fifty-three Engineering students from a public university in Sarawak. The cluster random sampling technique was used to select these respondents. The cluster chosen was the course code cluster of MAT235 (Calculus II for Engineers). The MAT235 students were from three Diploma Engineering programmes, i.e. Diploma in Electrical Engineering, Diploma in Civil Engineering and Diploma in Chemical Engineering.

Table 1 shows the demographic variables. The respondents consisted of thirty-five male and eighteen female students. Out of these male students, fourteen respondents were selected from Civil Engineering, ten respondents from Electrical Engineering and eleven respondents from Chemical Engineering. Meanwhile, thirteen female respondents were selected from Civil Engineering, two respondents were from Electrical Engineering and three respondents were from Chemical Engineering. Twenty-two respondents were in Semester 3, twenty-seven respondents were in Semester 4, and two respondents were in Semester 5. There was one respondent in Semester 6 and also one in Semester 7. Overall, the respondents from Diploma in Chemical Engineering were from the later semester as compared to the other programmes where the majority of respondents were in the earlier semester.

**Table 1: Respondents' Profile**

Variables \ Programme		Diploma in Civil Engineering	Diploma in Electrical Engineering	Diploma in Chemical Engineering	Total
		Gender	Male	14	10
	Female	13	2	3	18
Semester	3	14	8	0	22
	4	10	3	14	27
	5	2	0	0	2
	6	1	0	0	1
	7	0	1	0	1

### Instruments

The instruments in this study consisted of the pre- and post- tests (Appendix 1 and Appendix 2) which aimed to elicit the Engineering respondents' usage of Integral Maps. The pre- and post- tests applied the same set of questions for testing. The application of same set of testing helped to control the effect of instrumentation, in which changes in the measuring instrument may produce changes in the obtained measurements.

The pre- and post tests were divided into demographic profile, Part A and Part B sections. The demographic profile covered the respondents' programmes of studies, the course codes taken, the semester they were enrolled in, gender and group. The information of respondents' demographic profile was used in the t-test analysis and analysis of variance to compare if there was any significant difference in the mean test across different demographic profile. Part A required the respondents to indicate correct technique(s) in solving the given integrals. The questions for Part B were taken from previous examination questions; hence, they were considered as valid and reliable.

Respondents were asked to answer Part A and Part B of the test based on Integral Maps. In Part A, respondents were asked to indicate the type of bridging map and the correct technique(s) in solving the given questions by referring to the techniques of integrations in Integral Maps. In Part B, respondents were requested to solve three integral problems by showing all

the steps and to indicate precisely the name of the maps used in the solution. Respondents may refer to the given examples for guidance.

A questionnaire was also given to the respondents after the post-test. The questionnaire consisted of three sections: Section A (Respondent's Profile), Section B (Evaluation on Integral Maps) and Section C (Feedback). In Section B, the respondents were asked to evaluate Integral Maps using the 5-Likert Scale from "1" (strongly disagree) to "5" (strongly agree). The questions for Section B were adapted from MicroSIFT (1982): Evaluator's Guide For Microcomputer-Based Instructional Packages. Section C consisted of open-ended questions whereby the respondents were asked to give their opinions regarding the strengths and weaknesses of Integral Maps. Besides, they were also asked to give suggestions on the usage of Integral Maps.

### **Data Collection Procedures**

The Engineering respondents were given a pre-test in the early part of January 2011 as they already had basic knowledge of Integral Calculus. Then, throughout the semester, the researchers taught the respondents Integral Calculus with the aid of Integral Maps. The respondents were exposed to these maps for four months. Finally, at the end of April 2011, the respondents were asked to sit for their post-test, which was similar to the pre-test. The questionnaire was administered to the respondents after the post-test.

### **Integral Maps, the Interface**

The main map used in this study was known as the Bridging Roadmap. This map was extremely useful to explore integration problems. It assisted a user to identify the most suitable map for relevant integration techniques; hence, it helped to bridge conceptual knowledge to procedural learning (Figure 3).



General Form	Form of Integral	Function in the Integral	Technique
Integral of Basic Functions	$\int f(x) dx$ $\int \frac{1}{a^2 \pm x^2} dx$ $\int \frac{1}{\sqrt{\pm x^2 \pm a}} dx$	Basic function of x	Standard Integral
Integral of Basic Functions and its derivative	$\int f'(x) e^{f(x)} dx$ $\int f'(x) r^n(x) dx$ $\int \frac{f'(x)}{f(x)} dx$	Basic function of x and its derivative where n is any real number	Integration by u-Substitution
Integral with product of two functions	$\int f(x) g(x) dx$	Product of two different standard functions	Integration by Parts
	$\int u^m(x) v'(x) dx$	Product of two trigonometric functions and its power where m, n are positive integers	Integration of Product of Two Trigonometric Functions
	$\int \frac{p(x)}{(x^2 \pm a^2)^n} dx$ $\int \frac{1}{p(x)(x^2 \pm a^2)^n} dx$ $\int \frac{p(x)}{(ax^2 + bx + c)^n} dx$	Polynomial Function p(x) with $x^2 \pm a^2$ , $n^2 \pm x^2$ or $ax^2 + bx + c$	Integration by Trigonometric / Hyperbolic Substitution
Integral with division of two functions	$\int \frac{p(x)}{q(x)} dx$	Rational function of two polynomials p(x) and q(x), where q(x) can be factorized completely	Integration by Partial Fractions
	$\int \frac{dx}{u^m(x) \pm v^n(x)}$	Rational function of sin x and cos x where m, n are positive integers	Integration of Rational Functions of sin x and cos x

MORE FORM OF INTEGRAL EXAMPLE

Figure 3: The Bridging Roadmap

To emphasise how simple Integral Maps were, these maps were divided into two layers (Figure 4). The first layer was the core layer of the maps, which contained all the important knowledge whilst the second layer of the maps provided extra information. In each map, user was given an option to open the second layer. In cases where the user needed more detailed explanation on a related concept, he or she should proceed to open the second layer for more information.

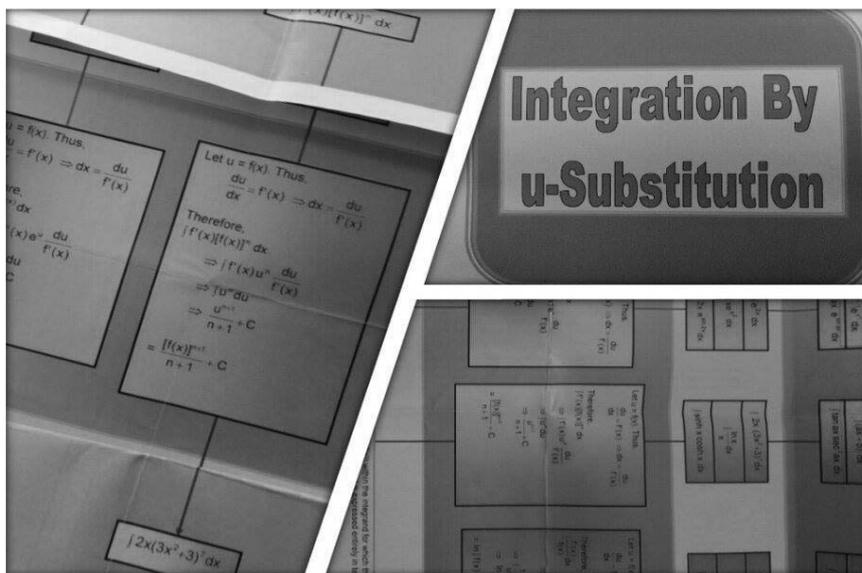


Figure 4: Map with Two Layers

This study used a total of seven maps consisting of maps that contained various integration techniques, i.e. integration by standard formula, integration by u-substitution, integration by parts (Figure 5), integration of product of two trigonometric functions, integration by trigonometric/hyperbolic substitution, integration by partial fractions and integration of rational functions of sin x and cos x.

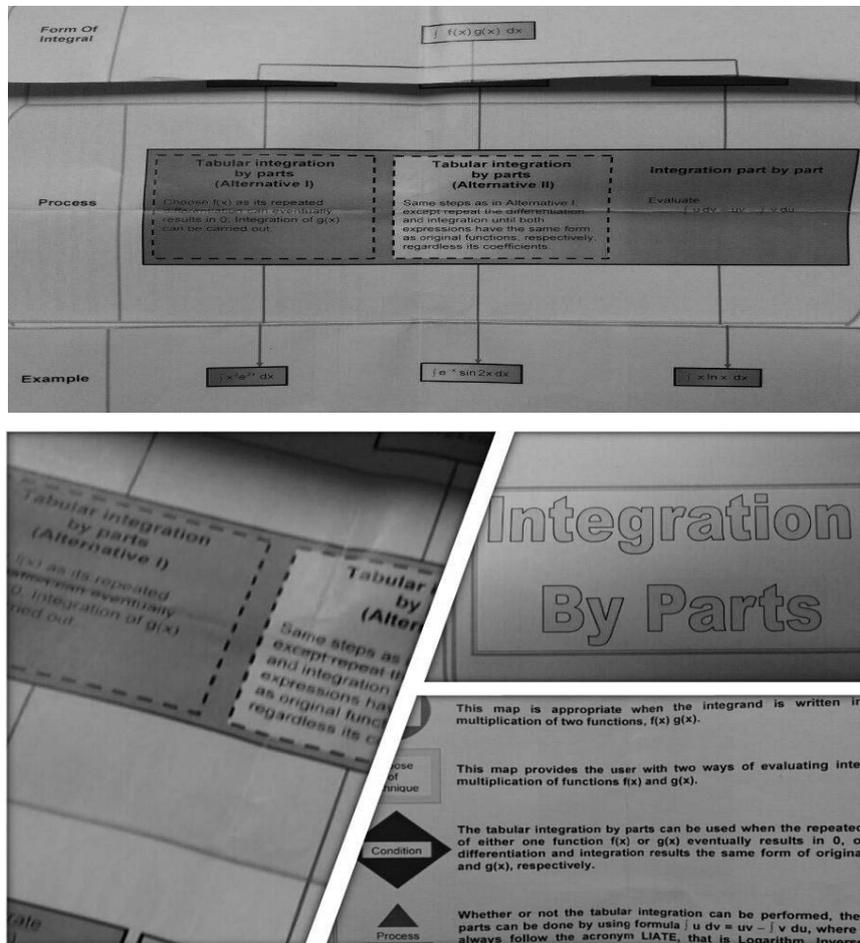


Figure 5: The Integration by Parts Map

These Integral Maps also consisted of prior knowledge that was useful for specific reference when using the maps. At the same time, more potential ideas for future learning could be explored together with the glossary of terms (Figure 6).

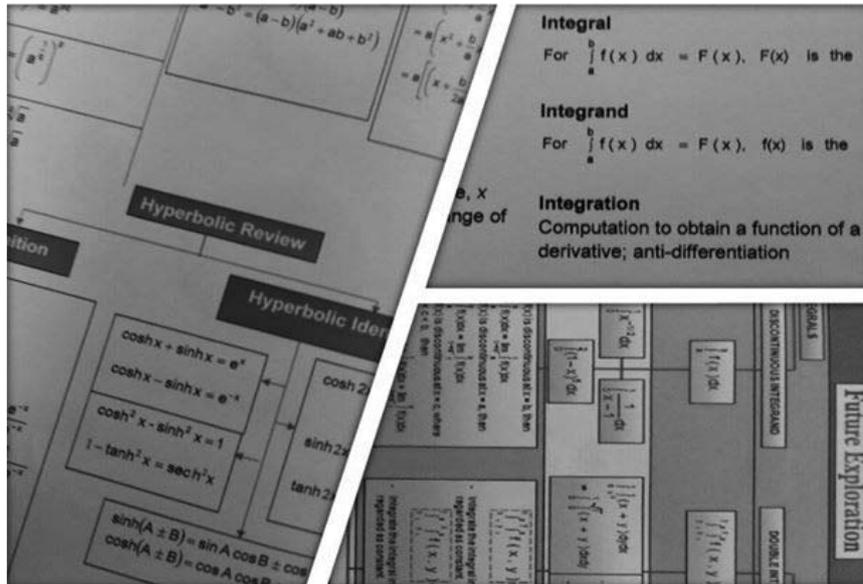


Figure 6: Prior Knowledge, Future Exploration and Glossary

The following example gives an idea on the use of the mapping technique in the learning of integral calculus.

Consider the problem,  $\int \frac{3x^2}{1+4x^3} dx$ . On the main interface which was the *Bridging Roadmap*, the student would be guided to make decision on the best technique of integration to solve the problem by identifying the general form and the symbolic form of the integral which could be confirmed by some examples. The phrases such as “general form”, “form of integral”, “function in the integral” and “more form of integral” used in the *Bridging Roadmap* represented a focus question or primary concept that must be answered. A few examples were included at the end of the concepts to aid the decision making process. When the student decided that the most appropriate map was Integration by u-Substitution since  $\int \frac{3x^2}{1+4x^3} dx$  fits into the  $\int \frac{f'(x)}{f(x)} dx$  form, he or she might want to read briefly the purpose, condition and process of the map. If the student was not confident to work out the solutions, then the Integration by u-Substitution map would be

opened. Its core layer consisted of phrases such as ‘form of integral’, ‘more form of integral’, ‘process’ and ‘example’. Here, the structural knowledge behind every sub-concept was outlined hierarchically using linking lines from top to bottom to show relationships between the ideas. By analyzing all the possibilities in the core layer, the student would get to choose the correct form, which eventually led them to the correct process and example types. The assistance provided in the core layer was usually sufficient for students to work out the solution independently, but if a student felt that he or she needed more guidance, then the second layer can be opened for a more detailed explanation and the step-by-step solution of some examples could be referred to.

### **Data Analysis Procedures**

The pre- and post-tests were marked based on a validated marking scheme. The validated marking scheme was taken from the final examinations for three courses: MAT235 (October 2008), MAT235 (April 2007) and MAT199 (October 2009) in a public university. The total marks for both tests of each Engineering respondent were recorded accordingly. The scale of measurement used in the pre- and post-tests was ratio whereby the respondents’ score in each question and also the total scores of all the questions were calculated for further data analysis.

Descriptive statistics were used to analyse their demographic profiles. The mean value, frequency and standard deviation were calculated by using the Statistical Package for Social Sciences (SPSS) version 14. Further, inferential statistics were also used to make deductions based on the sampling data. Normality test and homogeneity test of variances were carried out to check on the assumptions of parametric tests, i.e. t-test and analysis of variance (ANOVA). Whilst these assumptions were not violated, the paired samples of t-test would be used to analyse whether there was any significant difference between the mean scores of pre- and post- tests. On top of that, the independent samples of t-test was utilised to analyse if there was any significant difference in the post-test scores between both male and female respondents. ANOVA was also used to analyse if there was any significant difference in both pre- and post- tests scores of respondents for these Diploma programmes. Qualitative analysis was carried out to analyze the respondents’ comments and suggestions on the usage of Integral Maps.

## RESULTS AND DISCUSSION

This section reports the results of the pre- and post- tests, and the perceived opinions from the respondents obtained from the questionnaires.

### Pre- and Post- tests

To determine the effective use of the mapping techniques in solving integrals, an analysis of Engineering respondents' mean scores of pre- and post- tests was carried out. Table 2 shows the tests of normality for both scores. The data for pre-test did not fit the normal distribution; on the contrary, the data for the post-test fit the normal distribution (Sig.>0.05). As the sample size was large, paired samples t-test was used to determine if there was any significant difference between the mean scores of pre- and post- tests of the respondents.

**Table 2: Tests of Normality for Pre- and Post- tests Scores**

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	.130	53	.026	.937	53	.008
Post-test	.088	53	.200(*)	.977	53	.401

\* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Table 3 shows the analysis of the paired samples t-test with regard to the mean scores of pre-test and post-test. The analysis indicated that there was a significant difference between the mean scores of both pre- and post-tests of the respondents (Sig.<0.05). The application of Integral Maps to the respondents' learning of Integral Calculus significantly increased the mean scores of pre-test from 47.06 marks to the mean scores of post-test, 57.53 marks notably.

**Table 3: Paired Sample t-test**

Test	N	Mean	SD	t-value	df	p-value
Pre-Test	53	47.06	19.615	-3.739	52	0.000
Post-Test	53	57.53	22.440			
Pre-Test–Post-Test	53	-10.472	20.388			

\* Pre-Test Maximum Scores = 94 ; Post-Test Maximum Scores = 100

The results obtained from both pre- and post- tests indicated that the application of the Integral Maps in the learning of Integral Calculus showed some positive impact to the Engineering respondents' performance. This significant difference increase in the respondents' achievement showed that the respondents were able to perform the appropriate integration technique and procedures correctly. One possible explanation was that the built-in mapping techniques used in the Integral Maps helped the respondents to split complicated concepts into smaller sub-concepts to realize all the possible relationships that properly comprehend the entire Mathematical procedures.

The results are also in line with past research. Flores (2009) in his research found there were statistically significant differences with a confidence level of 99% in the measurement of numerical reasoning, abstract reasoning and spatial relationships for the experimental group before and after when concept maps were used for a Calculus course. This showed that the students attained meaningful learning, with the implicit use of concept mapping. Similarly, Awofala (2011) also found that students' achievements were significantly improved by the use of concept mapping strategy.

### **Pre- and Post- tests Analysis on Gender**

Table 4 shows the normality tests for both mean scores of pre- and post- tests on gender. The mean scores of both pre- and post- tests for the male respondents were slightly higher than the mean scores for the female respondents.

**Table 4: Tests of Normality for Pre- and Post- tests Scores on Gender**

	Gender	N	Mean	SD	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
					Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	male	35	48.14	20.968	.131	35	.136	.935	35	.041
	female	18	44.94	17.041	.129	18	.200(*)	.921	18	.132
Post-test	male	35	57.80	25.331	.135	35	.105	.949	35	.105
	female	18	57.00	16.018	.130	18	.200(*)	.977	18	.916

\* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Since the data fitted the normal distribution (Sig.>0.05), the independent t-test sample was used to determine if there was any significant difference in both mean scores of pre- and post- tests between male and female respondents. Table 5 shows the analysis of the independent t-test sample. The results indicated that there was no equal variance and no significant difference in the mean scores of pre- and post- tests between the male and female respondents (Sig.>0.05). This scenario implies that both male and female respondents performed equally in their tests.

**Table 5: Independent t-test Sample for Pre- and Post- tests on Gender**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Pre-test	Equal variances assumed	1.315	.257	.558	51	.579
	Equal variances not assumed			.597	41.269	.554
Post-test	Equal variances assumed	6.373	.015	.122	51	.904
	Equal variances not assumed			.140	48.628	.889

Although the male and the female respondents performed equally in their pre- and post- tests, the mean scores of post-test, on the other hand, was slightly higher than the mean scores of pre-test for the male and female respondents. This is consistent with the findings of Bello and Abimbola (1997) which have shown that gender did not significantly influence respondents' concept-mapping ability and their achievements.

### Pre- and Post- tests Analysis Across Programmes of Study

Table 6 shows the descriptive statistics of pre- and post- tests scores for the different Engineering programmes. The results of pre-test showed that the respondents from Chemical Engineering scored the highest mean (62.29) followed by the respondents from Civil Engineering (41.70) and Electrical Engineering (41.33). As for the post-test, the respondents from Chemical Engineering scored the highest mean (75.93) followed by the respondents from Electrical Engineering (54.50) and Civil Engineering (49.33). The analysis across the programmes showed that the Chemical Engineering respondents scored the highest mean in both pre- (62.29) and post- (75.93) tests.

**Table 6: Descriptive Statistics of Pre- and Post- tests Scores Across Programmes of Study**

	Programme	N	Mean	SD
Pre-test	Chemical	14	62.29	18.743
	Electrical	12	41.33	13.996
	Civil	27	41.70	18.472
	Total	53	47.06	19.615
Post- test	Chemical	14	75.93	19.613
	Electrical	12	54.50	16.139
	Civil	27	49.33	21.173
	Total	53	57.53	22.440

Table 7 shows the tests of normality for pre- and post- tests scores across the programmes of study. For the mean scores of pre-test, the data from the Civil Engineering did not fit the normal distribution as compared

to others. As for the post-test, the data from the Chemical Engineering did not fit the normal distribution; the rest of the data, on the contrary, fitted the normal distribution.

**Table 7: Tests of Normality for Pre- and Post- tests Scores Across Programmes of Study**

	Programme	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	Chemical	.113	14	.200(*)	.978	14	.960
	Electrical	.113	12	.200(*)	.969	12	.901
	Civil	.230	27	.001	.825	27	.000
Post-test	Chemical	.231	14	.041	.904	14	.128
	Electrical	.179	12	.200(*)	.890	12	.119
	Civil	.106	27	.200(*)	.971	27	.632

\* This is a lower bound of the true significance.  
A Lilliefors Significance Correction

Table 8 shows the homogeneity test of variances for both pre- and post- tests scores. From the table, there was an equal variance in the pre- and post- tests scores across the Diploma of Engineering programmes (Sig.>0.05). As the assumptions of the homogeneity test of variances were not violated for the pre- and post- tests scores, an analysis of variance was carried out to determine if there was any significant difference across these programmes.

**Table 8: Test of Homogeneity of Variances for Pre- and Post- tests Scores**

	Levene Statistic	df1	df2	Sig.
Pre-test	.437	2	50	.648
Post-test	.635	2	50	.534

Table 9 shows the analysis of variance across the Engineering programmes of Diploma studies. The results indicated that there was a significant difference in both pre- and post- tests scores across these programmes ( $p < 0.05$ ).

**Table 9: ANOVA across Three Programmes of Study**

		Sum of Squares	df	Mean Square	F	Sig.
Pre-test	Between Groups	4413.677	2	2206.838	7.076	.002
	Within Groups	15593.153	50	311.863		
	Total	20006.830	52			
Post-test	Between Groups	6663.279	2	3331.639	8.533	.001
	Within Groups	19521.929	50	390.439		
	Total	26185.208	52			

Table 10 shows the multiple comparisons across the Engineering programmes of Diploma studies for both pre- and post- tests. The Tukey HSD Test stated which group had differences. There was a significant difference in the test scores between Chemical Engineering and Electrical Engineering respondents in the pre-test as well as in the post-test. There was also difference between Chemical Engineering and Civil Engineering respondents.

**Table 10: Multiple Comparisons across Three Programmes of Study**

Dependent Variable	(I) Programme	(J) Programme	Mean Difference (I-J)	Std. Error	Sig.
Pre-test	Chemical	Electrical	20.952(*)	6.947	.011
		Civil	20.582(*)	5.816	.002
	Electrical	Chemical	-20.952(*)	6.947	.011
		Civil	-.370	6.127	.998
	Civil	Chemical	-20.582(*)	5.816	.002
		Electrical	.370	6.127	.998
Post-test	Chemical	Electrical	21.429(*)	7.773	.022
		Civil	26.595(*)	6.508	.000
	Electrical	Chemical	-21.429(*)	7.773	.022
		Civil	5.167	6.855	.733
	Civil	Chemical	-26.595(*)	6.508	.000
		Electrical	-5.167	6.855	.733

\* The mean difference is significant at the .05 level.

As for the multiple comparison of pre-test across the Engineering programmes of Diploma studies, the Chemical Engineering respondents (mean of 62.29) outperformed the Electrical Engineering respondents (mean of 41.33) and the Civil Engineering respondents (mean of 41.70). In addition, for the multiple comparison of post-test across the Engineering programmes, the Chemical Engineering respondents (mean of 75.93) also outperformed both Electrical Engineering (mean of 54.50) and Civil Engineering respondents (mean of 49.33).

The results indicated that the respondents from the Chemical Engineering significantly outperformed the Engineering respondents from the other two programmes in both pre- and post- tests. This could be partly due to the reason that Chemical Engineering respondents were from a later semester as compared to the other programmes where the majority of respondents were from an earlier semester.

## Respondents' Perceived views on the Integral Maps

This section reports the findings on overall perceived views from the respondents after using the Integral Maps. More precisely, it discusses the survey findings associated with the strengths and weaknesses of Integral Maps, and the respondents' views and opinions of the maps.

### Strengths and weaknesses of Integral Maps

The findings shows the respondents claimed that these maps were useful, helpful, systematic and user-friendly. However, they also commented that these maps were a little confusing and the examples given were not sufficient. This was in line with Brinkmann's (2003) view that confusion was one of the constraints for both mind and concept mappings.

Nevertheless, the majority of the respondents actually provided positive feedback on their usage of Integral Maps. Below are a few examples of the encouraging comments made by the respondents on the sentiment "useful and helpful". Five respondents explained:

*"From the map, I can identify which method to use for certain equations."*

*"Very good way to determine the technique used to solve the integration problem. I used this map and it helps me much."*

*"I like the way map been made. Using map really help me to answer the question."*

*"The maps help me to understand what method to use for any question."*

*"Very useful that helps us to find the answer faster."*

When asked about the design of the Integral Maps, four respondents viewed it as "systematic and user friendly". The comments shared by these respondents are as follows:

*"The maps are very systematic."*

*"The maps are easily to understand because have examples we can refer to."*

*"The maps is properly manage and able to guide user efficiently."*

*"I can stimulate fasten than other source. Quite an easy"*

*understanding example works and procedure of executing any work.”*

The qualitative findings also revealed that eight respondents wanted more examples while using the Integral Maps to assist their learning process. Below are examples of the comments given by three respondents on the sentiment “need more examples with solutions”.

*“This map is very good for the students like us to study or revise on the chapter of integration. I think this map can be upgrade. On my suggestion, the way to improve this map quality or grade of this are add more example on every sub-topic and show the best solution that make students easy to remember.”*

*“Good, but need more examples so that consumers will be able to use it fully.”*

*“Not all type of equations included in the examples”*

The Integral Maps can be made simpler to facilitate the Engineering students’ learning, especially in remedial level so that they can easily master these various integration techniques. From the findings, most respondents preferred to work in less overloaded interface, less complicated and less complex environment. They also favoured direct, easy-handling and simple human-computer interaction. Below are the examples of respondents’ comments on the sentiment “bit confusing and complicated”. Six respondents commented:

*“It is kind of confusing a bit initially. Anyway after a while, it is quite helpful.”*

*“Useful but a bit confusing.”*

*“Good maps but a little tiny bit confusing.”*

*“Take time to understand on how to use the map properly.”*

*“The table takes time to get used to. Too much information in one page. Can get very confusing for those who are weak.”*

### **Usage of Integral Maps**

Table 11 shows the respondents’ views on the usage of the Integral Maps. The results indicated that 41.5 per cent of the respondents would highly recommend the maps, 37.7 per cent of them would recommend the

maps with little change whilst 20.8 per cent of them would recommend the maps only if certain changes were made. None of the respondents chose the last statement, “I would not use and recommend this map”. This clearly showed that the respondents were very positive on the use of Integral Maps in assisting them to learn Calculus.

**Table 11: Comments on the Usage of Integral Maps**

Comment	Frequency	Percentage (%)
I would use and highly recommend this map.	22	41.5
I would use and recommend this map with little change.	20	37.7
I would use and recommend this map only if certain changes were made.	11	20.8
I would not use and recommend this map.	0	0.0

### **Correlation between post-test scores and respondents' comments**

Referring to Table 12, there was a significant positive correlation between the post-test and the ratings of the maps (Sig.<0.05,  $r=0.359$ ). This illustrates that the respondents with the higher post-test score tend to rate the use of the Integral Maps more positively.

**Table 12: Correlations between Post-test scores and Comments**

		Post-test	Comment
Post-test	Pearson Correlation	1	.359(**)
	Sig. (2-tailed)		.008
	N	53	53
Comment	Pearson Correlation	.359(**)	1
	Sig. (2-tailed)	.008	
	N	53	53

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

### **Analysis on respondents' suggestions for Integral Maps improvement**

The respondents suggested recommendations to improve the Integral Maps. These recommendations included “more examples and solutions can be added”, “more interesting and colourful features can be considered”, “more helpful guidelines to be provided” and finally, “a one-page map rather than folded maps in many pages may be better”.

Five respondents suggested that more examples and solutions were needed to understand the Calculus. Ideally, these examples, methods even solutions may be provided for a specific type of problem. The easier method to solve questions was highly favoured. Some of the comments by these five respondents were:

*“show the example of question and method to solve the question”,  
“can be more understandable if have more examples for one type of problems”,  
“need more examples and other easier ways to solve the question”,  
“put some examples and their solutions”, and  
“put more other methods and formula that used in Mathematics”.*

The other five respondents, on the contrary, mentioned that the Integral Maps can be made more colourful and interesting to improve the readability of the maps and effective memorization of formulae. In addition, the bright colours can attract users' attention effortlessly. They commented:

*“make it more interesting”,  
“make it colorful and interesting to read”,  
“make it colorful so we can remember the formula more”,  
“add more color to make this map interesting”, and  
“more color and sign given can attract me”.*

Notably, one respondent suggested that the Integral Maps should be displayed in one-page rather than the existing one which displayed many folded maps with many pages. He stated, “No need to make a folded note. Better in one page”.

Another respondent also suggested that more clear instructions on using the maps should be added to guide them to use the maps more effectively. The respondent states, “For the first time, the map is quite confusing without guidance and instruction on how to use it”.

Overall, the findings indicated how useful the maps were to the respondents.

## **CONCLUSION AND RECOMMENDATION**

The various difficulties and challenges faced by Engineering students in identifying suitable techniques and strategies to solve integral problems was the sole motivation for the development of Integral Maps. This study set out to determine how the maps affected the respondents’ performance and to gather their perspectives on mapping techniques. The use of mapping techniques showed a positive effect on their achievements. Regardless of gender, the respondents demonstrated their learning abilities and accuracies in identifying and solving the integral problems after being exposed to the maps. The respondents also seemed to be fascinated with the use of bright colours. They worked out the solutions as they practically interacted with the layering design of the maps. Although they may have expressed confusion as it may be their first exposure or attempt to understand the techniques, none of them, however, would not use or recommend the maps to their friends.

The mapping techniques are thus very appealing to the Engineering respondents. The techniques have a practical potential to be adapted into their classroom lectures and tutorials as part of the teaching and learning pedagogy. These techniques can be used as handy resources for students to learn integration techniques at ease. However, it should be noted that the study only examined the effectiveness of mapping techniques from a few Engineering clusters in an institution where the respondents’ exposures to the maps were brief, i.e. only four months. It is recommended that further research needs to be done to establish whether the maps are useful and effective to other academic programmes such as Science-based programmes besides increasing the duration of treatment between pre- and post- tests.

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## **ACKNOWLEDGMENTS**

Sincere appreciation and special thanks are conveyed to the developers of Integral Maps.

## APPENDICES

**PRE-TEST**

VENUE: ..... TIME: ..... DATE: .....

**Instruction: Please fill in all the details.**

Name: ..... Programme: .....

Student ID: ..... Part: .....

Gender: ..... CGPA: .....

Course Code: ..... Group: .....

---

**PART A**  
Given the following techniques of integrations:

- Integration at Sight (by Standard Formula)
- Integration By u-Substitution
- Integration By Parts
- Integration By Partial Fractions
- Integration By Trigonometric Substitution
- Integration of Products of Trigonometric Functions

By referring to the above techniques, indicate the correct technique(s) in solving the following integrals:  
R,Q.

Integral	Technique(s)
$\int \tan^{-2} 2x dx$	B and A

No.	Integrals	Technique(s)
1	$\int e^{0.6x} \sin x dx$	
2	$\int e^{3x} \sin x dx$	
3	$\int \frac{x^2}{x^2-4} dx$	
4	$\int \frac{x+1}{x^2-3x+2} dx$	
5	$\int \frac{\ln x}{\sqrt{x}} dx$	
6	$\int \frac{1}{\sqrt{25-x^2}} dx$	

(Source: Engineering Mathematics (6<sup>th</sup> Edition) by K.A. Stroud (2007))

**PART B**  
Solve the following integrals. Please indicate the technique(s) used in the solution and show all the steps.  
R,Q.

Find  $\int \cos 5x \cos 3x dx$ .

**SOLUTION:**

Step 1: The integral consists of Products of Two Trigonometric Functions.  
To solve, apply the formula:

$$2 \cos A \cos B = \cos(A+B) + \cos(A-B)$$

$$\Rightarrow 2 \cos 5x \cos 3x = \cos(5x+3x) + \cos(5x-3x)$$

$$\Rightarrow = \cos 8x + \cos 2x$$

$$\Rightarrow \cos 5x \cos 3x = \frac{1}{2} [\cos 8x + \cos 2x]$$

$$\therefore \int \cos 5x \cos 3x dx = \frac{1}{2} \int [\cos 8x + \cos 2x] dx$$

Step 2: Solve the integral using the Integration At Sight (i.e. using Standard Formula).

$$\int \cos 5x \cos 3x dx = \frac{1}{2} \int [\cos 8x + \cos 2x] dx$$

$$= \frac{1}{2} \left[ \frac{\sin 8x}{8} + \frac{\sin 2x}{2} \right] + C$$

$$= \frac{1}{16} \sin 8x + \frac{1}{4} \sin 2x + C$$

**Questions:**

- $\int \frac{x}{2} \sec^2 2x dx$
- $\int \ln(x^2+4) dx$
- $\int \frac{3}{x^2 \sqrt{x^2-16}} dx$

(Source: UTM Final Examinations; MAT235 (October 2008), MAT235 (April 2007), MAT199 (October 2009))

### Appendix 1. The Pre-Test

**POST-TEST**

VENUE: ..... TIME: ..... DATE: .....

**Instruction: Please fill in all the details.**

Name: ..... Programme: .....

Student ID: ..... Part: .....

Gender: ..... CGPA: .....

Course Code: ..... GROUP: .....

---

**PART A**

Given the following types of bridging map:

- I.  $\int p(x)^{q(x)} dx$
- II.  $\int p(x) q(x) dx$
- III.  $\int \frac{p(x)}{q(x)} dx$

Given the following techniques of integrations:

- A. Integration By Standard Integral
- B. Integration By u-Substitution
- C. Integration By Parts
- D. Integration By Partial Fractions
- E. Integration By Trigonometric Substitution
- F. Integration of Products of Trigonometric Functions

By referring to the above, indicate the correct type of map and the suitable technique(s) in solving the following integrals:

8.Q.

Integral	Type of Bridging Map	Technique(s)
$\int \tan^2 2x dx$	I	A and B

No.	Integrals	Type of Bridging Map	Technique(s)
1	$\int e^{\cos x} \sin x dx$		
2	$\int e^{3x} \sin x dx$		
3	$\int \frac{x^2}{x^2-4} dx$		
4	$\int \frac{x+1}{x^2-3x+2} dx$		
5	$\int \frac{\ln x}{\sqrt{x}} dx$		
6	$\int \frac{1}{\sqrt{25-x^2}} dx$		

(Source: Engineering Mathematics (9<sup>th</sup> Edition) by K.A. Stroud (2007))

**PART B**

Solve the following integrals by using the relevant map(s). Please indicate the map(s) used in the solution and show all the steps.

8.Q.

Find  $\int \cos 5x \cos 3x dx$ .

**SOLUTION (USING THE MAPS):**

Step 1: Refer to **e-Bridging Map**. The correct type is  $\int p(x) q(x) dx$

Step 2: In the **e-Products of Trigonometric Functions Map**, use  $\int \cos ax \cos bxdx$

Step 3: Apply  $2\cos A \cos B = \cos(A+B) + \cos(A-B)$

$$\Rightarrow 2\cos 5x \cos 3x = \cos(5x+3x) + \cos(5x-3x)$$

$$\Rightarrow \cos 5x \cos 3x = \frac{1}{2} [\cos 8x + \cos 2x]$$

$$\therefore \int \cos 5x \cos 3x dx = \frac{1}{2} \int [\cos 8x + \cos 2x] dx$$

Step 4: Refer to the example and solution given in the map, get idea to solve.

Step 5: By referring to the **e-Standard Integral Map**, solve the integral.

$$\int \cos 5x \cos 3x dx$$

$$= \frac{1}{2} \int [\cos 8x + \cos 2x] dx$$

$$= \frac{1}{2} \left[ \frac{\sin 8x}{8} + \frac{\sin 2x}{2} \right] + C$$

$$= \frac{1}{16} \sin 8x + \frac{1}{4} \sin 2x + C$$

or (in simpler way)

Refer to **e-Bridging Map** and **e-Products of Trigonometric Functions Map**.

Apply  $2\cos A \cos B = \cos(A+B) + \cos(A-B)$

$$\Rightarrow 2\cos 5x \cos 3x = \cos(5x+3x) + \cos(5x-3x)$$

$$\Rightarrow \cos 5x \cos 3x = \frac{1}{2} [\cos 8x + \cos 2x]$$

$$\therefore \int \cos 5x \cos 3x dx = \frac{1}{2} \int [\cos 8x + \cos 2x] dx$$

Refer to **e-Standard Integral Map**:

$$\int \cos 5x \cos 3x dx = \frac{1}{2} \int [\cos 8x + \cos 2x] dx$$

$$= \frac{1}{2} \left[ \frac{\sin 8x}{8} + \frac{\sin 2x}{2} \right] + C$$

$$= \frac{1}{16} \sin 8x + \frac{1}{4} \sin 2x + C$$

**Questions:**

1.  $\int \frac{x}{2} \sec^2 2x dx$
2.  $\int \ln(x^2+4) dx$
3.  $\int \frac{3}{x^2 \sqrt{x^2-16}} dx$

(Source: UITM Final Examinations: MAT235(October 2008), MAT235(April 2007), MAT199(October 2009))

## Appendix 2. The Post-Test

QUESTIONNAIRE

.....

**Section A (Respondent's Profile)**  
**Instruction: Please fill in.**

Gender : .....

Age : .....

Race : .....

Place of Birth : .....

Education Qualification : .....

Program : .....

Part : .....

CGPA : .....

**Section B (Evaluation on Integral Map)**  
**Instruction: This is an evaluation on the use of Integral Map. Read each sentence and circle your choice. There is no right or wrong answers. Your answers will be kept secret. Remember to answer all the items.**

1-Strongly Disagree   2-Disagree   3-Neutral   4-Agree   5-Strongly Agree

**CONTENT**

1. The content of the Integral Map is easy to understand.	1 2 3 4 5
2. The content of the Integral Map is accurate.	1 2 3 4 5
3. The content of the Integral Map is useful to solve integration question.	1 2 3 4 5
4. The content of the Integral Map guides me to identify the correct integration technique quickly.	1 2 3 4 5
5. The content of the Integral Map is not confusing.	1 2 3 4 5
6. The content of the Bridging Integral Map gives a big picture for deeper understanding where relationships between Integral Maps are shown clearly.	1 2 3 4 5

**INSTRUCTIONAL**

7. The level of difficulty of the Integral Map is appropriate for me.	1 2 3 4 5
8. The graphics / colour are used for appropriate instructional reasons.	1 2 3 4 5
9. The use of the Integral Map is motivational.	1 2 3 4 5
10. The Integral Map effectively stimulates my creativity.	1 2 3 4 5
11. The presentation of the Integral Map is clear and logical.	1 2 3 4 5
12. I can control the rate and sequence of using the Integral Map accordingly.	1 2 3 4 5
13. The purpose of the Integral Map is well defined.	1 2 3 4 5
14. The Integral Map achieves its defined purpose.	1 2 3 4 5
15. The instruction is integrated with my previous experiences.	1 2 3 4 5

16. The learning can be generalized to an appropriate range of situations. 1 2 3 4 5

**TECHNICAL**

17. The Integral Map is reliable in normal use.	1 2 3 4 5
18. The information displays are effective.	1 2 3 4 5
19. I can easily and independently use the Integral Map.	1 2 3 4 5
20. The Integral Map is comprehensive in term of its support for you.	1 2 3 4 5
21. The Integral Map is effective in term of clear, readable and attractive printed text.	1 2 3 4 5
22. The Integral Map is effective in term of readable and appropriate diagrams.	1 2 3 4 5

*(Adapted from MicroSIFT, (1982), Evaluator's Guide For Microcomputer-Based Instructional Packages. Oregon International Council for Computers in Education)*

**Section C (Feedback)**  
**Instruction: Please respond to the following items.**

**Strengths of the Integral Map:**

.....

.....

.....

**Weaknesses of the Integral Map:**

.....

.....

.....

**Other Comments / Suggestions (for better improvement):**

.....

.....

.....

**Section D (Recommendation)**  
**Instruction: Please tick (✓) the best choice.**

1. I would use and highly recommend Integral Map.	<input type="checkbox"/>
2. I would use and recommend Integral Map with little or no change.	<input type="checkbox"/>
3. I would use and recommend Integral Map only if certain changes were made.	<input type="checkbox"/>
4. I would not use and recommend Integral Map.	<input type="checkbox"/>

Appendix 3. The Questionnaire



## Investigating Novice English Language Teachers' Competency: A Case Study

Johan @ Eddy Luanan  
Nursyuhada Zakaria  
Universiti Teknologi MARA  
E-mail address: johaneddyluan@gmail.com

### ABSTRACT

*Teacher competency is an important issue in the field of teacher education. To be a competent teacher, an individual should possess adequate knowledge and skills to teach students in classrooms. Hence, this study aimed to investigate novice English language teachers' competency to teach in schools. There were three research objectives which were: to identify novice English language teachers' level of teaching knowledge, to assess their competency in classroom teaching and to assess their competency in relation to teaching knowledge and classroom teaching. This research employed a descriptive research design. A total of forty-one novice English language teachers in secondary schools were selected as the sample for the study. The instruments used were the Teaching Knowledge Test (TKT), teaching observation form and semi-structured interviews. All forty-one respondents were required to complete the TKT, while only nine respondents were selected for the observations and interviews based on their scores in the TKT. The findings revealed that the novice English language teachers had adequate teaching knowledge, as reflected in their scores in TKT. However, the knowledge was not completely applied in their teaching as observed by the researcher, which also indicated that they were incompetent in some aspects of teaching, such as choosing appropriate teaching methods and in time management. The findings hoped to provide input to the teacher training programmes offered in Malaysia.*

**Keywords:** *novice teachers, competency, teaching, English language, teaching knowledge*

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## **INTRODUCTION**

Teachers are the one of the most important assets in providing good education to students. Without talented and skilled teachers in the education system, students' achievement will be affected (Rivers, 1996 cited in Reza, Purya & Hesamoddin, 2011). With this in mind, nations strive for quality education and one of the ways of achieving this is by emphasizing on preparing good teachers. For example, in the United States, every state has its own licensing and certification rules that enable teachers to teach in their states (Roth & Swail, 2000). However, in Malaysia, its education system is centralized. The Ministry of Education (MOE) is responsible for planning the curriculum and syllabus, as well as in training and allocation of teachers in schools. In the Tenth Malaysian Plan, it is stated that Malaysia aims to achieve a knowledge-based economy by 2020. To achieve this aim, one of the strategies is through increasing the quantity and quality of teachers (Yaacob Wan Ibrahim, 2007 cited in Hasbee, Yi & Hong, 2012).

Consequently, thousands of teachers are produced every year by institutes of teacher education and universities to cater for the demand of teachers in schools. After four years of teacher education, graduates will be sent to schools to teach and this is the time where what they have learnt during teacher training is supposed to be utilised. Sometimes, however, novice teachers' expectations of what teaching profession should be are the total opposite of what the reality of teaching offers to them (Melnick & Meister, 2008). The first years of teaching are very critical whereby some researchers liken the first years as a 'sink or swim' situation (Nahal, 2010; Cobbold, 2007). Although these teachers are new, they need to learn and adapt to the situations or else they may suffer from stress and burnout which can result in teacher attrition.

## **BACKGROUND OF THE STUDY**

In Malaysia, teachers are very much in need as transmitters of knowledge to educate students in schools. This is the utmost reason why teachers are regarded as one of the nation's most important assets that contribute to the development of the country. According to statistics from the Ministry of Education, in 2012, there were 412,720 primary and secondary

school teachers compared to 5, 272, 478 students in schools. Based on these statistics, it is clearly shown that the number of teachers cannot accommodate the increasing enrolment of students. As one of the ways to solve this problem, public and private tertiary educational institutions are increasingly producing graduate teachers to cater for the demands of our schools. Unfortunately, another problem has emerged which is the quality of new teachers in teaching. These new teachers are sent to schools and are given responsibilities to teach students. However, when their performance is evaluated, they are reported to be incompetent in terms of subject matter and pedagogical skills (Munir, 2009). Some of the reasons given are they are fresh graduates and they still lack experience in teaching. Nevertheless, educational institutions should take the responsibility to produce qualified and well-equipped teachers to meet the needs of students. Although they are fresh graduates, they should be prepared to face the challenges of being a teacher not only in terms of teaching but in terms of managing students as well.

Farrell (2003) reveals that some of the challenges that novice teachers face are teacher workload, finding suitable teaching methods to meet students' proficiency, and discipline problems. Similar findings are found in a study conducted by Ye and Cooper (2011) on novice teachers' challenges and struggles. The novice teachers are reported to be challenged by classroom management and how to keep students motivated in learning the content taught. These findings imply that the first year of teaching is the most critical period in a teacher's beginning career in which he or she needs to adjust and adapt to the reality of teaching. In Malaysia, the issue of qualified English teachers to teach the English language is still a main concern as there is a strong decline in the level of students' proficiency in English (Mohan et al., 2010). In view of this, one of the attempts taken to improve English among students is the introduction of the programme called Enhancing Bahasa Malaysia and Strengthening the English Language (MBMMBI) (Ministry of Education, 2010). To achieve the objective of strengthening the English language, the quality of English language teachers also needs to be ensured so that it will be in line with the Ministry's goals. Thus, teachers who teach this subject must be from English-option to ensure quality with regard to subject matter and pedagogical aspects.

The term ‘pedagogical content knowledge’ was first introduced by Shulman (1986) to represent teachers’ professional expertise. It is formed from the combination of content knowledge and pedagogical knowledge, which are essential to every educator’s professional growth. Having content knowledge alone is inadequate if a teacher is unable to deliver the content effectively for students to understand. This is where pedagogical knowledge comes. Mishra and Koehler (2006) define it as “deep knowledge about the processes and practices or methods of teaching and learning and how it encompasses, among other things, overall educational purposes, values, and aims” (p.1026). Meanwhile, Shulman (1986) defines pedagogical content knowledge as “the ways of representing and formulating the subject that makes it comprehensible to others” (p. 23). In view of these, effective teachers should be equipped with these skills, together with good classroom management skills to ensure that learning can take place successfully.

## **STATEMENT OF THE PROBLEM**

Based on the discussion in the background of the study, there are various issues which are related to novice teachers. Some of the pertinent issues discussed are classroom management skills, lack of support from senior teachers, difficulty in handling individual student differences, and how to motivate students to be interested in lessons. In the Malaysian context, the issue of teacher competence in knowledge of teaching also needs to be addressed. Mohd Sofi (2003) observes that some ESL teachers are incompetent in using English due to their low proficiency in English. He further added that the lack of confidence to use and speak English is one of the problems ESL teachers face. In addition to this, Munir (2009) also identifies that English language teachers lack fluency and accuracy in English. These problems imply that English language teachers may have difficulties in the knowledge of subject matter.

Pedagogical knowledge is also a concern to novice teachers. Studies carried out by Melnick & Meister (2008) and Bezzina (2006) support this claim where novice teachers are found to be less prepared to teach mixed-ability classes and varying group sizes. It is shown that novice teachers may be less competent in varying their teaching methods to suit the ability of their students. Another challenging skill that novice teachers are concerned

with is classroom management skills. Previous studies (Melnick & Meister, 2008; Bezzina, 2006; Ye & Cooper, 2011) reveal that novice teachers tend to have problems in classroom management skills which also include discipline problems.

Despite attending and completing teacher preparation programmes which run for about four years, these problems still persist and are faced by novice teachers. Supposedly, with what they have learnt during the teacher preparation programmes, they should be able to carry out their responsibilities and perform to their utmost capabilities in schools. However, novice teachers in Nahal's (2010) research claimed that what they learnt during the preparation program was irrelevant to classroom teaching, while some of the pre-service teachers in Siti Salina's and Lee's (2008) study asserted that the programme did not expose them to the reality of teaching in schools. Consequently, examining the outcomes of previous studies, the researchers were prompted to investigate whether novice English language teachers are competent in their knowledge about teaching, which in turn is one of the indicators of competency in classroom teaching.

## **RESEARCH QUESTIONS**

This study set out to look into the following research questions.

1. What is the level of teaching knowledge among novice English language teachers?
2. How competent are novice English language teachers in classroom teaching?
3. How competent are novice English language teachers in relation to teaching knowledge and classroom teaching?

## **RESEARCH DESIGN**

The study adopted both quantitative and qualitative approaches with a descriptive research design. The process of conducting the research involved

three phases: (a) the Teaching Knowledge Test (TKT), (b) the observation and (c) the interview. These were employed in this study to assess novice English language teachers' competence in teaching. After the marks for the test were obtained, nine selected novice English language teachers were observed on their teaching and learning in classrooms. The observations were conducted twice for each of them. At the end of the second observation, each of them was interviewed. The interviews were aimed to elicit more in-depth information of their experience about their lessons and challenges faced in teaching.

## **SAMPLE**

The respondents for this study were 41 novice English language teachers in secondary schools in Kelantan. The distribution of the schools according to the districts and the number of teachers involved are illustrated in Table 1. For this study, the sampling technique that was used was stratified sampling, which is one of the probability sampling techniques. This technique was employed "to ensure that subgroups within the population are represented proportionally in the sample" (Mertler & Charles, 2005, p. 134). The reason for choosing this sample was due to some pre-determined characteristics that this sample possessed. The characteristics included novice teachers who taught English language subject and they had at least one to three years of teaching experience in schools. After the marks were obtained, the marks were categorized into low, average, and high scores. For each category, three novice English language teachers were selected randomly to be the respondents for the teaching observation. The same nine teachers were involved in the interviews conducted at the end of the second observation.

**Table 1: Distribution of Schools and Number of Teachers**

District	Name of School	Location	Number of Teachers
Kota Bharu	School 1	Rural Area	3
	School 2	Urban Area	2
	School 3	Rural Area	1
Bachok	School 4	Rural Area	1
	School 5	Rural Area	1
Pasir Mas	School 6	Rural Area	2
	School 7	Rural Area	2
Machang	School 8	Urban Area	2
Pasir Puteh	School 9	Rural Area	1
Tanah Merah	School 10	Rural Area	6
	School 11	Rural Area	1
	School 12	Rural Area	4
Kuala Krai	School 13	Rural Area	2
	School 14	Rural Area	3
	School 15	Rural Area	4
Gua Musang	School 16	Urban Area	3
	School 17	Rural Area	3
<b>Total</b>			<b>41</b>

## INSTRUMENTS

### Teaching Knowledge Test (TKT)

The Teaching Knowledge Test (TKT) was adapted from the University of Cambridge ESOL Examination and a pilot study was run to evaluate its reliability. All of the items for TKT were dichotomous. The value for KR-20 (Kuder Richardson–20) was 0.89 which shows that the instrument is reliable.

The TKT consisted of three core modules with 80 questions per module. Table 2 presents the outline of the modules in the test. The allocated time for each module was one hour and twenty minutes. Module 1 of the TKT was divided into three parts which were describing language

and language skills, background to language learning and background to language teaching. Module 2 of the TKT consisted of two parts, which were related to lesson planning and use of resources for language teaching. Part 1 of Module 2 assessed candidates' knowledge of planning their lessons and choosing appropriate activities to suit the aims and the needs of learners. Part 1 also tested candidates' knowledge of using suitable assessment activities among learners. Part 2 of Module 2 was related to how teachers employ appropriate resources, materials and aids in their teaching. The last module, Module 3 of TKT concerned teachers' knowledge of managing the teaching and learning process. The module was also divided into two parts. Part 1 of Module 3 dealt with teachers' and learners' language in the classroom while Part 2 was intended to assess teachers' knowledge of the range and function of strategies available to manage classrooms effectively.

**Table 2: Outline of TKT**

Module	Description	Content	Allocated Time
1	Language and background to language learning and teaching	Describing language and language skills	1 hour and 20 minutes
		Background to language learning	
		Background to language teaching	
2	Lesson planning and use of resources for language teaching	Planning and preparing a lesson or sequence of lessons	1 hour and 20 minutes
		Selection and use of resources and materials	
3	Managing the teaching and learning process	Teachers' and learners' language in the classroom	1 hour and 20 minutes
		Classroom management	

In terms of grading, the full marks for each module was 80. The marks were then categorized into four bands, as aligned by Cambridge. The range of marks for the bands is illustrated in Table 3 and it is applicable to all three modules in the test.

**Table 3: Band Range**

<b>Band</b>	<b>Band Range Outlined by University of Cambridge ESOL Examination</b>	<b>Range of Marks</b>
Band 1	Band 1 indicates that candidates achieve less than 20% of the available marks	0 – 15
Band 2	Candidates need to achieve approximately 20% of the available marks	16 – 39
Band 3	Candidates need to achieve approximately 50% of the available marks	40 – 67
Band 4	Candidates need to achieve approximately 85% of the available marks	68 – 80

### **Teaching Practice Evaluation Form**

The teaching practice evaluation form for observation was adopted from the one used by supervisors in the Faculty of Education in a public university in Shah Alam to evaluate their trainee teachers. The rationale for adopting this instrument was due to its reliability as it was used in the public university in Shah Alam to assess their trainee teachers. Using observation as one of the methods to collect data is advantageous since the researcher is able to capture and observe information in a natural setting (Cresswell, 2005). The teaching practice evaluation form consisted of twenty items, each one on a 5-point ordinal scale ranging from “none” (0), “poor” (1), “weak” (2), “average” (3), “good” (4) and “excellent” (5). The total score for this evaluation form was 100. The summary of the items and the marks for this form used in observation is presented in Table 4 while Table 5 shows the grading scale used in this study which was adopted from the same public university in Shah Alam.

**Table 4: Total Items and Marks for Each Section in the Teaching Practice Evaluation Form**

Section	Number of Items	Total Marks
Planning	4	20
Implementation	11	55
Closure	3	15
Teacher Characteristics	2	10
<b>Total</b>	<b>20</b>	<b>100</b>

**Table 5: Grading Scale for Teaching Practice Evaluation Form**

SCALE		
Percentage	Grade	Result
90 – 100	A+	
80 – 89	A	Pass with distinction
75 – 79	A-	
70 – 74	B+	
65 – 69	B	Pass with credit
60 – 64	B-	
55 – 59	C+	
50 – 54	C	Pass
0 – 49	F	Fail

## Semi-Structured Interview

Interview was employed as one of the methods in data collection since it could elicit further information from respondents. In this study, the researcher employed semi-structured interviews to elicit information regarding teacher competence and how they felt about it in view of the research questions in the study. The seven semi-structured interview questions were related to the three areas of teaching knowledge which were knowledge of subject matter, pedagogical knowledge, and managing teaching and learning process.

## RESULTS

### Demographic Information

#### Gender and age

The distribution of male and female novice English language teachers is presented in Table 6. It shows the percentage of male and female respondents involved in the study. It shows that the distribution of the female respondents was significantly higher than the male respondents. Twelve respondents (29.3%) were male while the remaining 29 respondents were female (70.7%).

**Table 6: Distribution of Gender**

Gender	Frequency (n)	Percentage (%)
Male	12	29.3
Female	29	70.7
Total	41	100

In relation to the age of the respondents, it was observed that novice English language teachers involved in the study were in the range of middle twenties. Table 7 presents the distribution of the respondents' age. The table reveals that only two respondents (4.9%) were 23 years old. 17 respondents (41.5%) were 24 years old, while 22 respondents (53.7%) were 25 years old.

**Table 7: Distribution of Age**

Age	Frequency (n)	Percentage (%)
23	2	4.9
24	17	41.5
25	22	53.7
Total	41	100

### **Academic qualification and CGPA**

In terms of academic qualification, all forty-one respondents were first degree holders. Table 8 illustrates the CGPA scored by the respondents in the study. Only one respondent (2.4%) achieved a CGPA below 3.00, while most of the respondents (n=30, 73.2%) managed to score below 3.50. The remaining ten respondents (24.4%) managed to graduate with a CGPA of 3.50 and above.

**Table 8: Distribution of CGPA**

CGPA	Frequency (n)	Percent (%)
2.50-2.99	1	2.4
3.00-3.49	30	73.2
3.50-4.00	10	24.4
Total	41	100

### **Teaching option and teaching experience**

In terms of teaching option, it was reported that all respondents were English option teachers. The present study focused on novice English language teachers who had at least three years of teaching experience. According to Table 9, out of 41 respondents, 21 respondents (51.2%) had been teaching for less than a year. Seventeen respondents (41.5%) had one year of teaching experience, while only three respondents (7.3%) were reported to have two years of teaching experience.

**Table 9: Teaching Experience**

Teaching Experience	Frequency (n)	Percentage (%)
Less than 1 year	21	51.2
1 year	17	41.5
2 years	3	7.3
Total	41	100

### Level of novice English language teachers' teaching knowledge

The responses for the three modules in the TKT were calculated and analyzed using descriptive statistics. Table 10 illustrates the total score of the TKT based on the three modules. The marks were categorized according to the four bands outlined by the University of Cambridge ESOL Examination.

**Table 10: Total Score of TKT according to Bands**

TKT Module	Band 1 (0-15)		Band 2 (16-39)		Band 3 (40-67)		Band 4 (68-80)		Total	
	n	%	N	%	N	%	N	%	n	%
Module 1	0	0	0	0	27	65.9	14	34.1	41	100
Module 2	0	0	0	0	37	90.2	4	9.8	41	100
Module 3	0	0	0	0	39	95.1	2	4.9	41	100

Based on Table 10, it was observed that in the three modules, none of the respondents scored Band 1 and Band 2. In Module 1, more than half of the respondents (n=27, 65.9%) managed to score Band 3, while another 34.1% (n=14) scored Band 4. The performance of the respondents in Module 2 and Module 3 was quite similar, since most of the respondents scored Band 3. Thirty-seven respondents (90.2%) achieved Band 3 and the remaining (n=4, 9.8%) scored the highest band, Band 4 in Module 2. For the last module, Module 3, 39 respondents (95.1%) managed to score Band 3 and only two respondents (4.9%) were classified as Band 4 achievers.

In order for the researcher to select some respondents for observations and interviews, the marks from Module 1, 2, and 3 of the TKT were summed up and were further classified into low, average, and high scores. The total marks for the three modules were 240. High scores ranged from 202 to 205, average scores were at 180 and low scores ranged from 147 to 158. For each category, three respondents were chosen to be observed and interviewed. Table 11 presents the marks chosen for every category.

**Table 11: Respondents Chosen for Observation and Interview**

Category	Respondent	Gender	School	Teaching Experience	TKT Score
High Scores	Respondent A	Female	School 4	2 years	205
	Respondent B	Male	School 10	Less than 1	204
	Respondent C	Male	School 13	2 years	202
Average Scores	Respondent D	Female	School 10	1 year	180
	Respondent E	Female	School 13	1 year	180
	Respondent F	Female	School 17	1 year	180
Low Scores	Respondent G	Female	School 10	Less than 1	158
	Respondent H	Female	School 12	Less than 1	147
	Respondent I	Female	School 16	1 year	147

### **Novice English Language Teachers' Performance in Observations**

Eighteen observations of the nine novice English language teachers from six secondary schools were carried out. Table 12 demonstrates the grades obtained from the observations. It shows that none of the respondents obtained Grade A for the observations. The highest grade achieved by the respondents was B+ which means that they passed with credit. The lowest score from the eighteen observations was 53, which was categorized as a pass.

**Table 12: Distribution of Grades Obtained in Observation**

Grade	Frequency	Grades
B-	3	
B	5	Pass with credit
B+	5	
C	1	
C+	4	Pass
Total	18	

### Findings from the Semi-structured Interviews

All nine novice English language teachers were interviewed after the second round of observations were completed. The semi-structured interview questions were related to the three areas of teaching knowledge which are knowledge of subject matter, pedagogical knowledge, and managing teaching and learning process. The interviews were transcribed and analyzed using content analysis; where the researcher categorized and analyzed the data according to the emergent themes. The findings from the interviews are reported according to the seven interview questions.

**Question 1:** In your opinion, do you think that your knowledge about the subject matter is adequate for you to teach?

The first question was related to the subject matter knowledge of the novice English language teachers to teach English. The responses from the nine teachers were analyzed according to the themes which emerged as shown in Table 13. It shows that more than half (66.7%) of the respondents felt that their knowledge about the English subject was still inadequate to enable them to teach their students effectively. They felt that they had a lot to learn since this was their first experience teaching in schools.

**Table 13: Content Analysis for Question 1**

No	Theme	Frequency (n)	Percentage (%)
1	Sufficient knowledge of the subject matter	3	33.3
2	Insufficient knowledge about English	6	66.7

**Question 2:** What challenges do you have in terms of knowledge of subject matter?

This question elicited the respondents' challenges and difficulties in teaching English. Only two themes emerged from the interviews. They were grammatical rules and fluency and accuracy in English. The themes are presented in Table 14.

**Table 14: Content Analysis for Question 2**

No	Theme	Frequency (n)	Percentage (%)
1	Grammatical rules	2	22.2
2	Fluency and accuracy	4	44.4

Since many respondents reported that they felt their knowledge of subject matter was inadequate, their challenges faced in classroom were further investigated. 44.4% mentioned that their problem in subject matter knowledge was related to their fluency and accuracy in the English language while another 22.2% reported that they had problems in explaining certain grammatical rules to the students. However, these novice English language teachers realized that all these challenges could be overcome with teaching experience.

**Question 3:** How do you approach your students to ensure that your lessons are suitable to meet the needs of your learners?

This question pertained to the pedagogical knowledge of the novice English language teachers. It aimed to look into how they selected and employed teaching methods to suit their learners.

**Table 15: Content Analysis for Question 3**

No	Theme	Frequency (n)	Percentage (%)
1	Interactive games	9	100
2	Use materials according to students' proficiency	5	55.5
3	Forcing the students	1	11.1
4	Use of translation method	9	100

Based on Table 15, most of the novice English language teachers had the same opinion on how to approach their students. All of them agreed that the use of interactive games was a good method to be employed since students would be interested to learn. Half of the respondents revealed that they had to adapt teaching materials to suit their students' language proficiency. Surprisingly, one novice English language teacher (11.1%) mentioned that she had to force her students to learn.

**Question 4:** What challenges do you have in choosing appropriate teaching methods/materials for your students?

For this question, the respondents were asked about their difficulties in choosing appropriate methods and materials to be used in the classrooms.

**Table 16: Content Analysis for Question 4**

No	Theme	Frequency (n)	Percentage (%)
1	Students' proficiency	9	100
2	Mixed ability students	8	88.9
3	Time constraint	6	66.7
4	No syllabus to follow	2	22.2
5	Lack of resources	3	33.3

Based on Table 16, five emergent themes were reported. As mentioned before, all novice English language teachers expressed their difficulty in choosing suitable teaching methods and materials due to the students' language proficiency.

**Question 5:** In your opinion, how does a well-managed classroom look like?

There were three themes which emerged from this question, as shown in Table 17. Generally, all novice English language teachers in this study had the same perception on how a well-managed classroom was supposed to be. All of them agreed that teachers should be in control of their classrooms. Most of them defined good classroom management in terms of students' behavior and the smoothness of the activities carried out during lessons.

**Table 17: Content Analysis for Question 5**

No	Theme	Frequency (n)	Percentage (%)
1	Teacher control the class	9	100
2	Students behave well	6	66.7
3	Activities are conducted successfully	6	66.7

**Question 6:** What strengths do you have in classroom management skills or strategies?

This solicited novice English language teachers' strengths in managing their classroom effectively. Based on Table 18, only two themes were reported from their responses. More than half of the respondents (66.7%) believed that their strength was in their ability to control the students' behavior in the classroom. Another 33.3% felt that they could implement classroom rules which were agreed on with the students.

**Table 18: Content Analysis for Question 6**

No	Theme	Frequency (n)	Percentage (%)
1	Ability to control the students	6	66.7
2	Establishing classroom rules	3	33.3

**Question 7:** What concerns/challenges do you have about managing the classroom effectively?

The last question pertaining to classroom management dealt with the novice English language teachers' weaknesses in managing the teaching and learning process in the classroom. Based on Table 19, 66.7% respondents stated that they had difficulty in attracting students' attention and interest to their lessons. Their inability to attract students' interest led some students to fall asleep during the lessons.

**Table 19: Content analysis for question 7**

No	Theme	Frequency (n)	Percentage (%)
1	Ability to attract students' interest	6	66.7
2	Time management	3	33.3
3	Students' misbehavior	3	33.3

## **DISCUSSION**

This study set out to investigate novice English language teachers' competence to teach in schools and data was gathered through TKT, teaching observations, and semi-structured interviews. The following discussion interprets and discusses the findings in detail with regard to the three research questions investigated in the study.

### **Level of Teaching Knowledge among Novice English Language Teachers**

The first research question deals with novice English language teachers' knowledge about teaching. The findings showed that the novice teachers had adequate knowledge regarding knowledge about teaching. It was reported that none of the novice teachers obtained Band 1 or Band 2 which signified limited knowledge of the concepts, terminologies and practices tested in the modules.

Among the three modules tested in the study, the novice English language teacher performed better in Module 1 which was related to language and background to language learning and teaching, compared to Module 2 and Module 3. This is shown through the percentage of novice teachers who obtained the highest band-Band 4, with the percentage of 34.1% for Module 1. Novice English language teachers who achieved Band 4 reflected that they possessed a full range of familiarity with the areas examined in Module 1. This finding is supported by Kömür (2010) who also reported that novice teachers in his study scored the highest in Module 1. Furthermore, the finding can also be attributed to the teaching experience of the novice English language teachers. Half of the respondents in this study have less than one year of teaching experience which indicated that they have just graduated from their degree. Therefore, it is not impossible that they still remember all the theories and concepts that they have learnt during the teacher preparation programmes.

With regard to the second module, Module 2, most of the novice English language teachers obtained Band 3, while a small number of them achieved Band 4. While in Module 3, the percentage of novice English language teachers who managed to score Band 3 was slightly higher than

in Module 2. This means that the teaching knowledge for lesson planning and resources and managing teaching and learning process are almost equal. Most of the novice English language teachers demonstrated that they were generally able to relate existing knowledge to both familiar and unfamiliar classroom situations. This finding concurs with Azadeh's and Mohammad Alavi's (2011) findings as the novice teachers in their study also did not yield significant difference in their performance in Module 2 and Module 3.

Overall, the novice English language teachers' teaching knowledge can be considered as adequate since they scored mostly in Band 3 and some in Band 4 in the Teaching Knowledge Test. According to the band descriptor outlined by the University of Cambridge ESOL Examination, these novice teachers should be able to relate their knowledge and apply it to the actual teaching in classrooms because they are familiar with most concepts, theories, terminologies, and practices involved in the teaching and learning process in the classroom.

Turnuklu and Yesildere (2007) also reported results in accordance with the finding in this study. Most of the pre-service primary Mathematics teachers in their study were found to have mediocre level of knowledge in teaching Mathematics, while none of them were reported to have excellent knowledge in teaching Mathematics. In addition, Faizah (2008) revealed that pre-service teachers possessed the basic knowledge and skills necessary of an English teacher even before they were assigned to teach during the teaching practicum. Therefore, it is expected that their teaching knowledge is at the adequate level during the first years of teaching in schools.

The finding is also in line with the academic achievement of the novice English language teachers in the study which was measured through their CGPA. It was found that most of them achieved a CGPA between 3.00 to 4.00 which can be considered as average to excellent achievement. This explains the adequate level of teaching knowledge possessed by the novice English language teachers.

The findings can also be attributed to the preparation programmes that they had attended before teaching. During the teacher preparation programmes of about four years, there are many teaching methodology and educational courses that students need to complete. The findings in this

study suggest that the courses offered in the preparation programmes have to an extent prepare the novice English language teachers to teach in terms of teaching knowledge. They are equipped with the knowledge about the English subject, teaching methods, teaching materials and are familiar with most of the theories and concepts in managing classrooms.

### **Novice English Language Teachers' Competency in Teaching**

The second research question investigated in the study is related to the novice English language teachers' competency in teaching English. The findings were gathered through teaching observations conducted among the nine selected novice English language teachers. In general, based on their distribution of grades obtained in the teaching observations, most of them managed to pass above average scores, while some of them achieved only average scores in their teaching observations. The highest grade obtained by the novice English language teachers was B+, while the lowest grade achieved was C-.

The findings imply that the novice English language teachers are not very competent in certain aspects of teaching. Kızılaslan (2011) also revealed similar findings on novice teachers' competency in teaching language skills. In his study, novice teachers were found to be incompetent in teaching listening, speaking, and writing but they were observed to be quite competent in teaching reading. In contrast, Abdul Rahim, Mohd Najib, and Ting (2010) and Naree Aware (2009) reported that teachers in their studies were competent in all aspects of teaching. The difference in the results could be due to the respondents involved in the studies conducted by Abdul Rahim, Mohd Najib, and Ting (2010) and Naree Aware (2009). Although many teachers participated in the studies, there were no further details provided by the researchers with regard to their respondents' teaching experience. Therefore, there is a high possibility that their teaching experience varied from less than three years to more than ten years of teaching compared to the teaching experience of one to three years of the respondents in this study. Another explanation for the difference is due to the instrument employed in their study. Using a questionnaire as the single measurement of competency which requires the teachers to rate their own teaching competency, the reliability of the results is an issue. As for the present study, the findings were triangulated through the TKT, teaching observations and semi-structured interviews.

The novice English language teachers' performance in teaching was further investigated in detail through the sections in the teaching practice observation form. Based on the findings presented, all nine teachers managed to score high marks in the Planning section. In this section, the novice teachers were able to state their teaching objectives and the objectives were suitable to the students' learning ability. They also exhibited their ability to prepare and organize their lesson plans before conducting lesson although the lesson plans were made simpler compared to those in teaching practicum. This was observed in the teaching observations where the novice English language teachers showed their lesson plans to the researcher before they started teaching. Fadzilah, Scaife, and Nurul Aini (2010) assert that doing preparation before teaching is a good strategy because while planning the lessons, novice teachers will be aware of what they want do and achieve in their lessons. As long as novice teachers have a plan on what and how they are going to teach a lesson, then it is not important whether the lesson plan is a detailed plan or just a simple one as long as the novice teacher understands it (Farrell, 2008).

A study by Choy et al. (2011) provides support for the findings in the present study. They found that novice teachers' perception of skills in lesson planning has increased at graduation and after their first year of teaching. Similar findings are also revealed by a study conducted by Wong et al. (2011). In addition, pre-service teachers in Al-Mahrooqi (2011) believed that they were prepared enough in writing effective lesson plans. The findings in this study could be due to the methodology courses and the teaching practicum that the novice teachers completed during their preparation programmes. In the methodology courses, students are required to do microteaching sessions in the class. Before they could teach, they need to come out with a detailed lesson plan describing what and how they are going to deliver a lesson. Besides that, being in a school for almost 12 weeks for the teaching practicum, they need to prepare weekly lesson plans for the principal to check. Their mentor teacher and supervisor also supervise the trainee teacher's development when they come into the class for observations. Therefore, these teaching and learning experiences have contributed to the novice English language teachers adequate knowledge in preparing effective lesson plans when they are posted to schools.

## **Novice English Language Teachers' Competency in Relation to Teaching Knowledge and Classroom Teaching**

It can be concluded from the findings from the TKT, observations and interviews that novice English language teachers who scored high marks in the TKT did not necessarily perform better in classroom teaching. Furthermore, some of them who achieved low scores in the TKT which was an indicator of teaching knowledge performed equally well in classroom teaching in comparison with those who had an average level of teaching knowledge. Kömür (2010) reveals similar findings in his study which provide support for the present study. Incompetency in teaching some aspects of language skills is also highlighted in Kızılaslan's (2011) study.

Therefore, these findings lead to the assumption that having a high level of teaching knowledge does not guarantee that novice English language teachers can teach effectively. Although it has an influence to some extent, some of them mentioned in the interviews that what they learnt during the teacher preparation programmes was different from what they faced and practised in schools. The most cited reason for this problem was students' low proficiency in English as stated by Respondent B.

*“When you learn in university, you are told that the students are like they are all good and you won't face any kind of situation like the students don't understand even a single word in English. So, when you are posted to schools, you know the difference – the real situation. As for myself, I found it quite hard for me to be in this school”.*

The novice English language teachers felt that another reason which restricted them from applying all the theories they learnt was teaching exam-oriented lessons. They mentioned that with so many programmes conducted in schools, they had to keep up with the syllabus and prepare the students to sit for examinations. This influenced how they taught, i.e which was more focused on answering questions rather than emphasizing on student learning. Respondent D expressed her opinion on this matter.

*“When I am teaching, I think I am more to exam-oriented because when we learn in university, our aim is to make the students*

*to understand* better, right. But, when we come to school, the approach is different. Our KP (KetuaPanitia) or our school will stress more on how to get the students to pass the examinations; or for the advanced level, how to make the students get an A”.

Based on the findings from the test, observations and interviews, it can be summarized that novice English language teachers in this study are still incompetent in certain areas of teaching and to cope and adapt with situations in school. It is evident that disconnection exists between the theories learnt and the reality in schools. This issue has been highlighted and discussed in previous studies on teacher education i.e., the findings of this study is supported by findings from studies carried out by Siti Salina and Lee (2008) and Nahal (2010). These studies have reported that pre-service teachers feel that the courses they have learnt do not help them much in their teaching. A gap between theories learnt and application in the classroom is often cited as the major problem in preparing qualified teachers (Melnick & Meister, 2008; Al-Mahrooqi, 2011; Ahmad Alkhalwaldeh, 2011; Thenjiwe & Lebogang, 2012). Novice English language teachers should be able to integrate and link theory into practice and vice versa so that they will be able to face any difficulties in handling the teaching and learning process.

## **CONCLUSION**

The findings of this study have implications for teacher training and shed some light on novice English language teachers. Results from this study provide some information for educational policy makers to enhance novice teachers' first year of teaching and reduce teacher retention. The Ministry of Education needs to provide specific and detailed guidelines and resources for novice English language teachers to follow.

In addition, supervision of novice English language teachers from the MOE as well as schools should also be strengthened and continuously done so that the development of novice teachers could be monitored. The current practice is that within the first three years, a Nazir from the MOE will go to schools to observe novice teachers and if they pass, they will become full-fledged teachers after they have attended an induction programme. It is recommended that the supervision is extended even after they have become

full-fledged teachers. Schools should also play a role in supporting novice English language teachers in their professional growth. It is a common practice that when a new teacher is posted to a school, he or she will be overwhelmed with many responsibilities apart from teaching. It is indeed a good opportunity for the new teacher to learn; however, caution must be taken to avoid the novice teacher from being overloaded with other roles in the school which in turn, will likely to affect his or her capability to teach effectively.

Teacher training programmes have benefited novice English language teachers in many aspects, as illustrated by the results of this study. Nevertheless, necessary improvements need to be considered to ensure that qualified teachers are produced. The courses offered in the preparation programmes for teachers should provide opportunities for future teachers to relate to and apply the theories they have learnt. It is suggested that more practical courses and teaching methodologies are included to equip trainee teachers to face the realities in school. A longer period of teaching practicum is also necessary as twelve weeks are inadequate for the trainees to be exposed to the challenging world of teaching. This will provide opportunities for them to practice their time management skill and questioning skill with students. The courses offered should made them more familiar with school context so that they will be able to cope and adapt with the new environment and people around them and mostly, to benefit their students.

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## **The Relationship between Iranian EFL learners' Self-perceived Knowledge and Loyalty to Iranian Culture and their Attitudes Toward Cultural Differences in their First Year and Last Year of Studying at University**

Seyed Hassan Talebi  
Habibollah Halimi Jelodar  
University of Mazandaran, Babolsar, Iran  
E-mail address: Htalebi1@yahoo.com

### ABSTRACT

*This study used mixed method research to find out about Iranian EFL learners self-perceived knowledge and loyalty to their Iranian and Islamic culture and their attitude toward cultural differences in their first and last year of studying at university. 40 senior students, majoring in English Language and Literature were asked to rate their self-perceived knowledge of and loyalty to their own Iranian and Islamic culture and then answer the questionnaire about attitudes toward cultural differences. They were also interviewed about this. The analysis of data showed first, there was a positive relationship between Iranian EFL students' knowledge of and loyalty to their own culture. Second, no relationship was found between students' attitudes toward cultural differences and their knowledge of and loyalty to their own culture. Third, it was found that there was a significant improvement in the degree of ethnorelativism from first to last year of studying at university. It is concluded that students can have an ethnorelative attitude toward cultural differences and at the same time, be loyal to their own culture.*

**Keywords:** *cultural differences, cultural attitudes, cultural sensitivity, cultural awareness*

## **INTRODUCTION**

The development of cultural awareness and intercultural skills is a by-product of learning a foreign language. Hereby, L2 learning connects one to a world culturally different from one's own (Sercu, 2005, p. 1). Greey (1994) defines culture as a learned system of values and beliefs among a group of people. According to Corbett (2003), an intercultural approach to second language learning develops an understanding of how the values and beliefs are produced and negotiated within a particular language community. One cultural and intercultural benefit of language learning and the development of intercultural competence is that one learns about one's own culture and will be able to compare it with that of the target language culture. Alptekin (2002) favors an intercultural communicative competence rather than a native-like competence. Meanwhile, Crozet and Liddicoat (1999, p. 115) state that students need to "distance themselves from their native language/cultural environment to see it for the first time as what it really is, as just one possible world view and not the only world view."

Schumann in his acculturation model (1986) studied the impacts of personal variables (e.g., relative status, congruence, attitude, integration, closed or open attitudes, amount of time in the culture, size of the learning group and cohesiveness of the group) on adult language learning and suggested three strategies taken by adult learners when encountering a foreign culture: total adoption of the target culture (assimilation), preservation of the home culture (total rejection of the target culture) and "acculturation" which he defines as learning to function in the new culture while maintaining one's own identity. Tomlinson (2001, cited in Tomlinson & Masuhara, 2004, p. 3) states that cultural awareness involves an increased understanding of one's own and other people's cultures. Levine and Adelman (1982) maintain cultural conflicts occur as a result of misinterpretations, ethnocentrism, stereotypes and prejudice. Preventing these conflicts is possible with increased awareness of our own attitudes as well as sensitivity to cross-cultural differences. Developing cultural sensitivity does not mean that we lose our cultural identities—but rather that we recognize cultural influences. Paige (1993) believes that if cultural differences are greater, especially when they are perceived negatively, the experience of these differences will be more challenging.

In the past, a native-speaker variety of English was the norm in language learning and the native speaker's culture, perceptions and speech were of high significance in setting goals for teaching of English (Richards, 2003). The native speaker norm was the criterion for measuring the authenticity of materials, the efficacy of teaching methods, the proficiency of the learners, etc. (Rajagopalan, 2004). However, this native speakers' norms of linguistic accuracy and social appropriateness is no longer a must, mainly because of the imperialistic motives behind the teaching of the Standard English for Anglo-Americanizing the world (Modiano, 2009). The teaching of English in its western cultural context which was formerly thought to be a neutral language and the means for the expression of culture, or cultures (Richards, 2003) is now considered by many ELT practitioners as a mean through which some superpowers transfer their ideologies and social values to other nations of the world. Phillipson (1992) calls this 'linguistic imperialism' and Cooke (1988) uses the metaphor "Trojan Horse" for the harmless-looking expansion of English to many areas of the world. Therefore, there was resistance to the teaching of English containing its western culture and countries began to think of protecting their indigenous languages and cultures. Kasaian and Krishna (2011) studied the attitudes of the Iranian education officials and parents of high school students toward the teaching of English in its Western cultural context. Results showed that exposure to aspects of incompatible western culture was resisted by parents and Iranian education officials. Holmes (2003) believes that the consequences of teaching English in its western culture can be averted if it is used just as a culture-free instrumental tool.

Liddicoat (2002) states that language acquisition and culture acquisition are similar processes in that the learner begins with knowledge of L1 culture and gradually approximates the target culture. These processes contain rules which are derived either from L1 or L2 cultures and/or rules that belong to neither culture. Following Selinker (1972) who coined the term interlanguage, Liddicoat (2002) coins the term intercultural for these approximative systems, and regards each intercultural as a new stage in the development of a set of intercultural practices. However, learning about cultural practices in English language as transferred through imported learning materials is still regarded as a worrying issue by Iranian policy makers and curriculum developers who greatly value their own cultural norms and values. The question here is whether an increase in the awareness

of a foreign culture really results in the rejection of one's own culture among Iranian EFL learners. Therefore, it is interesting to know about the attitude of Iranian EFL learners toward such cultural differences and to study the development of intercultural sensitivity from the first to the last year of studying at university. Thus, this study is an attempt to answer the following questions:

1. Is there any relationship between knowledge of native culture and loyalty to it?
2. Is there any relationship between the stages of intercultural sensitivity with knowledge of native culture among Iranian EFL learners?
3. Is there any relationship between the stages of intercultural sensitivity with loyalty to native culture among Iranian EFL learners?
4. Is there any significant difference between the stages of intercultural sensitivity in the first year and last year of studying at university among Iranian EFL learners?
5. What attitudes toward cultural differences do Iranian EFL learners have in their first and last year of studying at university?

## **METHODOLOGY**

### **Participants**

The participants of this study were 40 (6 female and 34 male) sixth and eighth semester BA students, majoring in English language and literature from the University of Mazandaran. They had already passed at least six semesters of English literature courses and were considered to have good familiarity of English culture due to these courses. Students of English language and literature course were selected for this study as they were more aware of the history and culture of the country whose language they were studying. They all had previous experiences of learning English at guidance school, high school and English language institutes. They were exposed to English culture input during their years of study. These forty

students were first given the questionnaire for the quantitative phase of the study. Then, for the qualitative phase, five participants were interviewed. They were identified as Students A to E.

Student A, a female, aged 23 believed that she would continue her studies after graduation. In addition to the obligatory courses, she spent about 20 hours a week working on homework outside the classroom. She believed that her speaking ability was not very good but she could fluently read texts of different genres. She also had limitless access to different learning materials in English, either in print, or audio or video materials.

Student B aged 22 thought English was an interesting language and that it was a necessity to know English. His goal was to learn to become an English teacher. He felt that his comprehension skills (reading and listening) were better than production skills (speaking and writing skills). In addition to the obligatory courses, he spent about 16 hours a week working on homework outside the class. He also had good access to different learning materials in English, either in print, or audio and/or video materials.

Student C, aged 23 had been exposed to English from the age of 10 at language institutes. Although he said he improved much of his English language ability when he became a university student. He also would like to start learning another foreign language like German. In addition to the obligatory courses, he spent about 17 hours a week working on homework outside the class. He also had good access to different learning materials in English, either in print or audio and/or video materials.

Student D, aged 23 said that he usually spoke English very often to classmates or roommates on campus and he enjoyed communicating with them. However, he had a difficult time writing in English, as he had less interest in it in language learning. In addition to the obligatory courses, he spent about 17 hours a week working on homework outside the class. He also had good access to different learning materials in English, either in print, or audio or video materials.

Student E, aged 22 had studied English with a focus on vocabulary, grammar and reading comprehension at school for seven years. He enjoyed English and was happy to have learnt the skills of listening, speaking, reading

and writing. He appreciated every opportunity to use materials of various genres to improve his general English. He spent good time working on his English outside the classroom and did his homework with care. He felt it would be good to learn another foreign language. He had access to different learning materials in English.

## **INSTRUMENTS**

### **Questionnaire on the Background of the Participants**

The participants in the study were asked about their self-perceived knowledge of and their loyalty to their Iranian and Islamic culture. A five-point Likert scale (Very much, Above Average, Average, Below Average and Very Low) was designed for this questionnaire. They were also asked about their language learning experience, access to different learning materials in English and interest in English.

### **Questionnaire on Attitudes toward Cultural Differences**

For the purpose of determining the attitudes of Iranian EFL learners towards cultural differences and to show the development of intercultural sensitivity from the first to the last year of studying at university level, a questionnaire on attitudes toward cultural differences was used. Items in this questionnaire were adapted from the Developmental Model of Intercultural Sensitivity (DMIS) developed by Bennett (1986, 1993 cited in Paige, 1993).

The Developmental Model of Intercultural Sensitivity (DMIS), developed by Bennett (1986, 1993, cited in Paige, 1993) is an explanation of how people construe cultural differences. The assumption underlying this model is that the more sophisticated and complex one's experience of cultural difference becomes, the more increase there will be in one's potential competence in intercultural relations. Bennett identified two stages, namely, ethnocentric stage which is the extent to which one's own culture dominates other cultures, and the ethnorelative stage, which is the extent to which one recognizes and respects perspectives from other cultures. Each stage has three orientations through which people move in their acquisition of intercultural competence. These are explained as follows:

#### Stage A: The Ethnocentric Stages of Development

1. Denial: At this stage, that is denial of cultural differences, one's own culture is regarded as the only real culture and the people of one's own culture may be considered to be the only real humans and others are regarded as simpler forms to be tolerated, exploited, or even eliminated if necessary. Generally, at this stage, people are disinterested in cultural differences and may act aggressively to eliminate a cultural difference.
2. Defense: Defense against cultural differences is the state in which one's own culture is experienced as the only viable one and superior to other cultures. At this stage, people are more adept at discriminating differences. They experience cultural differences as more real than do people at the denial stage. At this stage, cultural differences are more threatening to people than at the denial stage.
3. Minimisation: At this stage, people assume a basic similarity, either a biological or a spiritual one among all humans. However, such learners lack cultural awareness and their conceptions of similarity are based on their own cultural positions. Such learners are often interested to have others in activities; however, they do not recognize the problems that underlie cultural differences and the political and social issues of group membership.

#### Stage B: The Ethnorelative Stages of Development

The next three DMIS orientations are more ethnorelative, meaning that one's own culture is experienced in the context of other cultures.

4. Acceptance: At this stage, one's own culture is just one of a number of equally complex worldviews and people with this worldview are able to experience others as different from themselves, but equally human. People at this stage can construct culture-general categories allowing them to generate a range of relevant cultural contrasts among many cultures.
5. Adaptation: Adaptation to cultural differences is a stage in which the experience of another culture creates perception and behavior which

are appropriate to that culture. One's worldview is expanded to include relevant constructs from other cultural worldviews. In other words, adaptation involves the extension of one's beliefs and behavior, not a substitution of one set of beliefs and behavior for another. Thus, one does not lose his/her primary cultural identity to operate effectively in a different cultural context.

6. Integration: Integration is the final stage of intercultural development. At this stage, learners extend their perception of events in a cultural context to the perceptions of their own identity. However, Bennett et al. (2003) argued that in most situations of intercultural communication, integration is not necessarily more useful than adaptation and to be successful at intercultural communication, empathy for people from other cultures is required and a radical reconstruction of identity is not necessary.

The questionnaire on attitudes toward cultural differences was assigned a five-point Likert scale (Never, Seldom, Sometimes, Usually, and Always true of me). The questionnaire was translated into Persian to ensure students were comfortable with the concepts explained in their mother tongue, and for more clarity some words were clarified in the translation.

To ensure its internal consistency reliability coefficient, the instrument was piloted among eight students and the Cronbach Coefficient Alpha was 0.73. Two experts in the field were also asked to assess the instrument in terms of how effectively it sampled significant aspects in line with its purpose to provide content validity. Ambiguous words were removed and/or reworded based on their feedback.

## **Interview**

In order to get more in-depth information on the attitudes of Iranian learners of English toward cultural differences, a semi-structured interview was conducted. The interview questions were drawn from available literature. Data from the interviews was transcribed and analyzed. To ensure the validity of the data from the interviews, a pilot interview was conducted with three students from the original population who took part in the quantitative phase of the study. The students used during the pilot

study were excluded from the final sample as their experience with the earlier interview questions might be a bias in answering. The pilot interview lasted for 15 to 20 minutes, and showed that the questions were capable of eliciting data on the thoughts and practices of the interviewees, serving the content validity of the instrument. The pilot test showed that all of the questions were clear except one of the probes for question two which was reworded and clarified.

## **Procedures**

The study was first conducted on 41 senior students of English language and literature. They had already passed many courses in English language and literature, and since they were exposed to texts (e.g., short stories, novels, poetry) incorporating elements of English culture, they were regarded suitable for the purpose of this study. However, one student withdrew from participation in the midst of data collection, making the total number of participants 40. First, subjects were asked to answer two questions in the questionnaire on their background. Then, the main instrument, which was the questionnaire adapted from the developmental model of intercultural sensitivity, developed by Bennett was given to the participants to find out about their attitudes towards cultural differences in their first and fourth year of studying at university. Therefore, for the quantitative phase of the study, the researchers relied on retrospective longitudinal study methodology. As Dornyei (2011, p. 84) states, “retrospective longitudinal data are gathered during a single investigation in which respondents are asked to think back and answer questions about the past.”

For the qualitative phase of this study, the researchers explained the purpose of the interview so that the interviewee responded openly and in detail. The respondents were assured of the confidentiality of the interview data. The interview was conducted on a one-on-one basis and in Persian so that in-depth data could be collected more easily. First, the participants were thanked for agreeing to attend the interview. Then, the interviewees were informed that the interview might last about 20 minutes and they were allowed to stop answering questions at any time if they wished. The researchers often started with easy personal questions to make respondents feel relaxed and to encourage them to open up during the interview. The participants verbally confirmed that they understood the purpose of the

research, the confidentiality of their response and they were happy to take part in the research.

## Results

The findings for the quantitative data are reported in line with the research questions one to four and the findings from the qualitative data answered research question five.

**Research question 1:** Is there any relationship between knowledge of native culture and loyalty to it?

In order to find the relationship between the two variables, that is participants' self-perceived knowledge about their own culture and their loyalty to it, the Spearman Rank Order Correlation Coefficient was used. The correlation was significant at 0.01 level. Therefore, the null hypothesis for question one was rejected (See Tables 1 and 2).

**Table 1: Correlation between Knowledge of Native Culture and Loyalty**

			X4	X5
Spearman's Rho Correlation coefficient	X4	Correlation Coefficient	1.000	.487**
		Sig. (2-tailed)	.	.002
		N	39	39
	X5	Correlation Coefficient	.487**	1.000
		Sig. (2-tailed)	.002	.
		N	39	40

\*\* . Correlation is Significant at the 0.01 Level (2-tailed)

As shown in Table 2, there is a positive relationship between the knowledge of and loyalty to one's own culture at .05 level of significance.

**Table 2: Correlation between Knowledge of Native Culture and Loyalty**

Variable	Degree of Students' loyalty to their own culture	
Degree of students' knowledge about their own culture	Correlation Coefficient	0.487**
	Pv	0.002
	N	40

**Research question 2:** Is there any relationship between the stages of intercultural sensitivity with self-perceived knowledge of native culture among Iranian EFL learners?

As shown in Table 3, Pv is more than .05. Therefore, it is found that there is no significant difference between the stages of intercultural sensitivity with knowledge of native culture among Iranian EFL learners and as a result, the null hypothesis formulated for question two was confirmed.

**Table 3: The Relationship between Ethnocentrism and Ethnorelativism with Students' Knowledge of their Own Culture**

Variables	Students' knowledge of their own culture	N	Mean	SD	F	Pv	Results
<b>Ethnocentrism</b>	Low	0	0	0	.200	.895	H <sub>0</sub> accepted
	Below average	3	2.6667	.82787			
	Average	7	2.5204	.32918			
	Above average	16	2.6339	.41955			
	High	7	2.5204	.39709			
<b>Ethnorelativism</b>	Low	0	0	0	.839	.280	H <sub>0</sub> accepted
	Below average	4	3.1500	.36968			
	Average	7	3.1571	27603			
	Above average	17	3.2294	44688			
	High	10	3.3600	75159			

**Research question 3:** Is there any relationship between the stages of intercultural sensitivity with loyalty to native culture among Iranian EFL learners?

Table 4 shows that  $P_v$  is larger than .05. There is no significant difference between the different groups; hence, the null hypothesis is not rejected.

**Table 4: The Relationship between Ethnocentrism and Ethnorelativism with Students' Loyalty to their Own Culture**

Variables	Students' knowledge of their own culture	N	Mean	SD	F	$P_v$	Results
<b>Ethnocentrism</b>	Low	2	2.9286	.30305	2.148	101.	$H_0$ accepted
	Below average	3	2.6905	.64813			
	Average	6	2.2976	.35403			
	Above average	16	2.5268	.40814			
	High	6	2.8810	.25422			
<b>Ethnorelativism</b>	Low	2	2.9500	.07071	2.287	.081	$H_0$ accepted
	Below average	4	3.3250	.52520			
	Average	6	3.0833	.33714			
	Above average	17	3.4706	.49594			
	High	9	2.9444	.50028			

**Research question 4:** Is there any significant difference between the stages of intercultural sensitivity in the first year and last year of studying at university among Iranian EFL learners?

Table 5 shows the comparison between the first and last year of studying at the University of Mazandaran in terms of two levels of ethnocentrism and ethnorelativism.

**Table 5: Comparison between the First and Last Year of Studying at the University of Mazandaran among Iranian EFL Learners in Terms of Levels of Ethnorelativism and Ethnocentrism**

Variables	Ethnocentrism				Ethnorelativism			
	First Year		Fourth Year		First Year		Fourth Year	
	N	%	N	%	N	%	N	%
<b>Low</b>	142	26.15	159	29.28	63	15.37	58	13.46
<b>Below Average</b>	153	29.18	122	22.47	117	28.54	59	13.69
<b>Average</b>	111	20.44	98	18.05	106	25.85	107	24.83
<b>Above Average</b>	90	16.57	106	19.52	70	17.07	106	24.59
<b>High</b>	47	8.66	58	10.68	54	13.17	101	23.43

The findings in Table 5 show that 25.23% and 30.2% of the students in the first year and the fourth year of studying at university respectively reported above average and high level of ethnocentrism. 55.33% and 51.75% of the students in the first year and the fourth year respectively reported below average and low level of ethnocentrism.

The findings also show that 30.24% and 48.02% of the students in the first year and the fourth year of studying at university respectively reported above average and high level of ethnorelativism. Next, 43.91 % and 27.15% of the students in the first year and the fourth year respectively reported below average and low level of ethnorelativism.

According to the results, the highest mean for ethnorelativism (3.24) belongs to students in the fourth year, and the lowest mean for ethnocentrism (2.54) belongs to students in the first year (See Table 6).

**Table 6: Highest and Lowest Means for Ethnocentrism and Ethnorelativism**

Pair	Mean $\pm$ S. E
1 Ethnocentrism First year	2.5433 $\pm$ 0.092
Ethnocentrism Fourth year	2.5887 $\pm$ 0.074
2 Ethnorelativism First Year	2.8105 $\pm$ 0.095
Ethnorelativism Fourth Year	3.2421 $\pm$ 0.082

In addition, according to Table 7, there is no significant difference between the mean scores of the first year and fourth year for ethnocentrism; however, there is a significant difference between the mean scores of the first year and fourth year for ethnorelativism. Therefore, the null hypothesis for question four is accepted for ethnocentrism, but rejected for ethnorelativism (See Table 7).

**Table 7: Mean Differences for Ethnocentrism and Ethnorelativism**

Kind of Attitude	Year of study	Mean	SD	Mean Difference	T	Pv	Result
Ethnocentrism	First year	2.5433	0.52669	-0.04545	-0.684	0.499	H <sub>0</sub> Accepted
	Fourth year	2.5887	0.42297				
Ethnorelativism	First year	2.8105	0.58577	-0.43158	-6.337	0.000	H <sub>0</sub> rejected
	Fourth Year	3.2421	0.50330				

**Research Question 5:** What attitudes toward cultural differences do Iranian EFL learners have in their first and last year of studying in the university?

The findings from the interview indicated that when the participants were asked for their reasons for studying English students A and B answered they could not gain admission to other courses of their interest. Next, students A, B, D and E mentioned that they studied English for job purposes. Students C, D and E mentioned they were interested in English culture and that they wanted to learn English for possible immigration purposes.

Next, when the participants were asked if the English culture clashes with their native culture and if it still attracted them in their first and final year at the university, their responses were as follows. Student A claimed she found the English culture to be better. She would try to follow it as long as it did not damage her cultural identity. She believed her culture was good but this did not mean it was perfect. Student B believed if it was against the Islamic culture, he would not follow it. Student C would like to follow his Iranian and Islamic cultures. Student D believed some aspects of the English culture were not moral and he did not like to follow them and there were some other aspects which were good although they did not exist in the Iranian culture. He said he would follow them but not openly. Student E tried not to practice the English culture although he liked to know about it.

Next, the participants in their first year and last year of studying English at university were asked whether they thought language and culture were interrelated. All of them considered language and culture to be interrelated.

The participants were also asked in their first year and last year at the university whether they thought English cultural values had to be removed from their textbooks at the different educational levels. Students A and B claimed they changed from first to last year and became open to English culture. They believed some awareness of the differences was good as it expanded their world view. Student C and E did not change from first to last year at university as they were always open to cultural differences. They believed bad things must be removed. Student D said he was not in favor of English culture in his first year because he did not know much about it and had no reason to reject or accept it. In his fourth year, he believed there were taboos and immoral aspects in English culture which must be removed from the course books, but students must be familiarized with the English culture.

Then, the participants were asked if their behavior really changed and they became English-like in all aspects of thinking and behavior as a result of studying English materials loaded with content on English culture at the university. Four of the participants (students A, B, C and D) claimed they respected their own culture, were proud of it and loved it more than before. However, they believed studying English made a different person out of them and allowed them to have a better understanding of others'

culture. The fifth participant (student E) felt some changes in some areas (e.g., punctuality) and tried to be English-like.

The participants also contributed their views at the end of the interview. Student A mentioned that as a result of studying English, she felt a need to know more about her ancient Iranian culture. Student B thought he needed to learn English for communication and studying English would improve his world. Next, student C expected Persian teachers to speak more about native Persian and Islamic cultures. He claimed he did not know about ancient Iranian culture and how to explain when asked about it. Another participant, student D believed that familiarity with foreign culture helped him to protect his culture better and helped to detect their problems and remove them. Lastly, student E claimed that as a result of learning about English culture, he could protect himself better, for example, he claimed to behave well in a foreign country without losing his cultural identity.

## **DISCUSSION AND CONCLUSION**

The findings of the study showed that there was a positive relationship between the knowledge of and loyalty to one's own culture. There was no significant difference between the stages of intercultural sensitivity with knowledge of and loyalty to native culture among Iranian EFL learners, and there was no significant difference in ethnocentrism from first year to last year of studying at the university. However, in terms of ethnorelativism, there was a significant difference from first year to last year of studying at the university as students were more ethnorelative in their attitudes toward cultural differences in the last year.

The qualitative phase of the study shed more light on the quantitative findings. With regard to the reasons for studying English, three out of the five students interviewed said they were interested in English culture and wanted to know about it. Even though so, all the students seemed to be uneasy practicing cultural differences when they were in their first and final year of studying at university. Student A would try to follow aspects of the English culture if they were better. Students B and D did not follow the English culture as they believed respectively it was against the Islamic culture and some aspects of the English culture were not moral. Student

C preferred his Iranian and Islamic cultures whereas student E tried not to practice the English culture although he liked to know about it. All the students in their first and last year of studying at university believed that language and culture were interrelated. As for changes in attitude from first year to last year of studying at university with regard to their reflection of English culture in textbooks, students A, B and D claimed there was a change from first to last year as they became open to English culture and their awareness of the differences expanded their world view. However, students C and E did not change from first to last year at university as they were always open to cultural differences. Meanwhile, changes in behavior and thinking and becoming English-like, as a result of studying English materials loaded with English culture at university did not happen to students A, B, C, and D who loved their culture and were proud of it. However, student E felt some changes, from first to last year, in some areas (e.g., punctuality) and tried to be English-like. As for further explanations of the issue, student B and student E thought learning English culture would respectively improve his world and help protect him better, for example, by behaving well in a foreign country without losing his cultural identity. Student A felt studying English made her more aware of her ancient culture and student D said that being familiar with the foreign culture helped him to protect his culture better and alleviate its problems. Meanwhile, student C expected Persian teachers to speak more about Persian culture.

From these findings, it is concluded that learning English as a foreign language which is a necessity for developing learners' competencies in today's rapidly changing world does not necessarily alienate Iranian EFL learners from their own cultural values. The study showed that even if the participants become ethnorelative and are open to other cultures through the passage of time, they still stay loyal to their native culture and would like to remove their L1 cultural problems, if any. Thus, awareness of other cultures does not necessarily imply disloyalty to or rejection of one's native culture.

The development of cultural awareness and intercultural skills is a by-product of learning a foreign language. Crozet and Liddicoat (1999, p. 115) state that students need to "distance themselves from their native language/culture environment to see it for the first time as what it really is, as just one possible world view and not the only world view". Bennett, et. al. (2003) argue that at lower levels of language proficiency, learners move

from denial to defence, then move from ethnocentric to ethnorelative stages at intermediate level and develop the higher levels of the ethnorelative stages at an advanced level. The findings of this study are in line with Schumann's (1986) acculturation theory which is defined as learning to function in the new culture while maintaining one's own identity.

However, there are studies which draw different conclusions about culturally loaded educational materials in foreign language learning in Iranian context. Kasaian and Krishna (2011) showed that exposure to the incompatible aspects of Western culture was resisted by parents and the Iranian education officials. The teaching of English in its western cultural context was formerly thought to be a neutral language and the means for the expression of culture, or cultures (Richards, 2003). Many ELT practitioners consider English as a vehicle through which some superpowers transfer their ideologies and social values to other nations of the world. Phillipson (1992) calls this "linguistic imperialism" and Cooke (1988) uses the metaphor 'Trojan Horse' for the harmless-looking expansion of English to many areas of the world.

In line with the above, two viewpoints about cultural differences can be considered. According to the findings of Kasaian and Krishna (2011), Holmes (2003), Phillipson's (1992) linguistic imperialism, and Cooke's (1988) metaphor of Trojan Horse, our EFL/ESL learners should not be in touch with Western culture through textbooks and learning materials. However, this view equals lack of familiarity with cultural differences with cultural safety for language learners. If we conceive advantages for removing culturally-loaded texts from text-books, disadvantages can also be conceived, one of which is that our EFL learners become vulnerable to the negative aspects of cultural differences and will not know how to deal with them independently. From the findings of the present study, it is concluded that learning about a foreign culture does not necessarily result in disloyalty to or rejection of one's own culture. Bada (2000) asserts that awareness of cultural values does not necessarily invite learners to conform to such values.

One of the benefits of learning about other cultures is that one becomes more familiar with one's own cultural capacities and beauties. Therefore, instead of moving to the two extremes of free use or total non-

use of culturally loaded materials, we should enlighten our EFL learners of the cultural discrepancies and differences between the two languages. This awareness raising should not necessarily be done in English language courses, and the role of Persian language teachers, as shown in the interview, is also undeniable as they will illuminate our students about our own ancient and contemporary cultural attractions.

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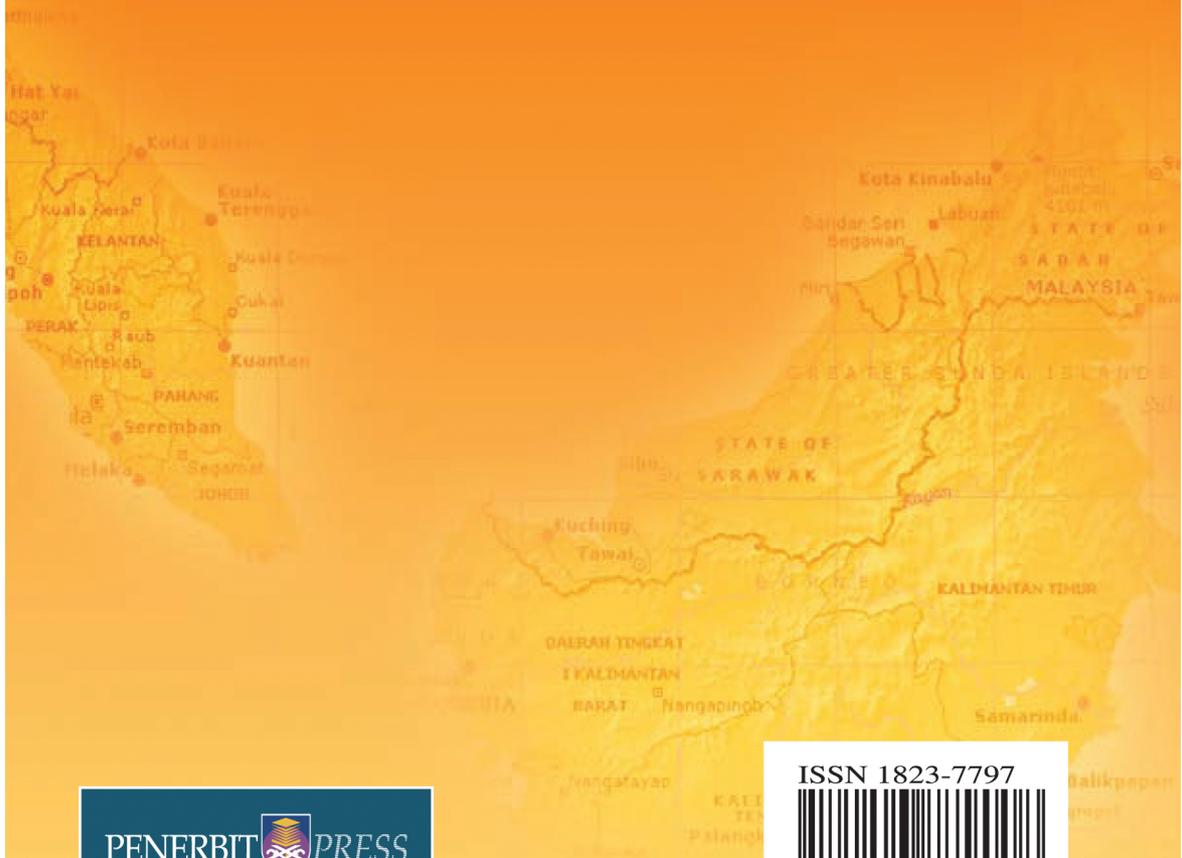
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