Multiple Intelligences and Multimedia in the ESP Classroom: The Rural Urban Distinction

¹Saraswathy Thurairaj, ²Clamentine Mangalam, ³Maran Marimuthu

¹Lecturer Faculty of Creative Industries Universiti Tunku Abdul Rahman (UTAR) Malaysia ²English Facilitator Prince Court Medical Centre Malaysia ³Assistant Professor Faculty of Accountancy and Management Universiti Tunku Abdul Rahman (UTAR) Malaysia

Abstract: This study establishes how the concept of multiple intelligences can be integrated into the ESP classroom to discover how it impacts the writing performance of both urban and rural students. The design of activities to be carried out was aimed at drawing upon the learners' more developed intelligences while working on their weaker ones. The methodology employed was an experimental comparison of scores of the two groups of subjects - urban and rural, under two different teaching modes; the first being the everyday teaching styles that learners are exposed to as opposed to one with the incorporation of multimedia and multiple intelligences. This is a longitudinal study that included a sample of 200 respondents from Universiti Tunku Abdul Rahman's (UTAR) urban and rural campuses, that were used to evaluate the effectiveness of the regular and multiple intelligences teaching styles and the differences in performance of urban and rural participants. The unit of analysis was an individual (students) and self-administered questionnaire that was considered for gathering data at an empirical level as proposed by Gardner (1993) in a lesson based on a video presentation entitled "An Inconvenient Truth" on Global Warming. The lesson employed various aspects of learning using visual animation and verbal narration while at the same time encouraging divergent thinking to complete tasks, using convergent aspects of linguistics for both urban and rural students so as to evaluate the significance of this lesson on the students' performance. This study includes the analyses of average (mean) value of the scores and paired sample testing using the Statistical Package for Social Sciences (SPSS). The results reiterate the fact that the use of multiple intelligences in the ESP classroom is far more effective as they register higher mean scores as compared to the regular teaching style.

Key words: Rural, Urban, Teaching Style, Multiple Intelligences

INTRODUCTION

A plethora of research exists concerning Gardener's Multiple Intelligences (MI) theory; however, in the Malaysian context such studies are frequently limited to the urban sector. In addition, very few theories in educational research have had the impact that MI has had (Shearer, 2004). According to Thurairaj et al. (2010) the infusion of MI and multimedia in the teaching process tends to result in more fruitful results in terms of attaining greater participation of students and this in turn offers valuable skills on report writing. Consequently, this study looks at the impact of Multiple Intelligences and Multimedia incorporation in the teaching and learning of urban and rural students of Malaysia, specifically at University Tunku Abdul Rahman campuses, to discover if there is a distinction in performance between the two groups of students after introducing MI and Multimedia based activities in their English for Management lessons.

Gardner's theory claims that all humans possess multiple intelligences and just like there are variations in the physical appearances of people, each of our intelligence profiles vary as well (Gardner, 2004). Similarly, significant differences in intelligence profiles may exist between urban and rural students due to other external and internal factors that affect their learning. As educators it is important to know who our learners are, what they can do and how they learn. Human learning is a complex phenomenon and learning processes among individual students are never identical. Illeris (2007) defines learning as a multifaceted human endeavour which comprises three main domains: learning outcomes, mental processes and interactive processes between learners and their social environment. Therefore, learning is both an individual mental event and an interactive social event leading to learning outcomes. Learners can be encouraged to encounter pleasurable learning experiences when lessons are designed to draw on learners' inherent intelligences and conducted in social environments that are conducive.

E-mail: tsaraswathy@utar.edu.my

At University Tunku Abdul Rahman (UTAR), ESP is taught as a compulsory subject in the first and second year tertiary programmes. In the urban context, the students enrolled at the university have varying language backgrounds. A majority of the students use Mandarin as their first language as they come from National Type schools where the language of instruction is Mandarin. A small minority of students come from National schools where the medium of instruction is Bahasa Malaysia. However, for urban students, the exposure to the English language is impressively greater outside the school environment due to extensive entertainment facilities, easy access to technology and their home educational backgrounds. UTAR's Kampar campus provided the sample group of rural students where ESP is also a compulsory subject. In this milieu too, a majority of the students are from the Mandarin stream with a minority from national schools, with Bahasa Malaysia as the medium of instruction. In contrast, the rural students have limited exposure to English language outside the school environment in general. This is the key factor that constitutes the urban rural divide. The social setting for both types of students and their learning environments also differ considerably.

Additionally, the lack of continuity in the medium of instruction from schools to universities (the language of instruction in schools is Mandarin, Tamil or Bahasa Malaysia while at the universities it is completely in English) and the negligible exposure to English has a major corollary on students entering universities. English is the language of knowledge; therefore, universities opt to use English as the medium of instruction. As such, students grapple with this new environment where English is the language of instruction while teaching styles also may differ from schools. In addition, students are compounded with having to write assignments which are expository in nature in the English language. They struggle as their English proficiency is limited. In the ESP classes, students are expected to be able to write reports as part of their assignments. The sudden shift in the medium of instruction, coupled with having to write expository essays are arduous for students and have posed a tremendous problem to these learners. The difficulty arises as students have a poor grasp of English and grapple with the language which was only taught them as a second language in their high schools. Such inadequacies pose concern for both lecturers and students as students face greater language demands at the university. Consequently, alternative pedagogical strategies have to be formulated to help students overcome these inadequacies. For these reasons, the seminal Multiple Intelligences and Multimedia activities are proposed by the researchers in this study.

This study was initiated to establish how learners can be empowered to learn English in the English for Management class through identifying their intelligence profile. It will further ascertain whether using multimedia together with the incorporation of Multiple Intelligences (MI) will make learning pleasurable, encouraging high mental acuity. Subsequently, it is hoped that the infusion of the multifaceted tasks using MI will enable learners to write well in their report writing class assignment. Specifically, this study investigates the extent to which the multiple intelligence teaching style has a positive impact on the writing performance of both urban and rural students. Further indications of performance will include the distinction between urban and rural students' report writing performance after the initiation of Multiple Intelligences and Multimedia in their lesson.

Literature Review: Multiple Intelligences:

A precept of Multiple Intelligence (MI) theory is that people learn and exploit knowledge in many different ways. These differences challenge an educational system which assumes that everyone can learn the same materials in the same way and prescribes the "one-size-fits all" modular units of teaching. The MI theory has now helped change this perception and teachers can diversify their teaching practices. Students who cannot master the competence of the language reveal significant mastery and understanding when the lesson is conducted using Multiple Intelligences. If MI theory is implemented in regular education, it is likely to strengthen student learning and build their self-esteem (Gardner, 1991). The researchers concur that appropriate tasks created to stimulate individual intelligences (MI) in the natural classroom setting will create situations for pleasurable learning. It also aids teachers in easily creating personalized and diversified instructional experiences which could empower students with deep metacognitive understanding whilst tapping into students' intrinsic levels of motivation to learn. The eight intelligences are Linguistic, Logical-mathematical, Spatial, Bodily Kinesthetic, Musical, Naturalist, Interpersonal and Intrapersonal (Gardner, 1983). Of these eight, Linguistic and Logical-mathematical intelligences are the most associated with academic achievement which is the traditional concept. Contrary to this belief, the researchers opine that all eight intelligences can be used in the English for Specific Purpose (ESP) classroom lessons creating opportunities for learners to be actively engaged in learning experiences that are pleasurable. The lack of support for differentiated instruction for average students is the most conspicuous inequality in educational practices. MI opens doors to more inclusive, affective and effective instruction as teachers can develop more diversified instructional techniques to meet the needs of many different types of learners whether they are urban or rural.

Multimedia:

With the advance of technology, opportunities to use multimedia in the classroom have tremendously increased making learning and teaching gratifying. According to Mayer and Sims (1994) multimedia learning occurs when students use information presented in two or more formats: visually presented animation and verbally presented narration in the process of constructing knowledge that is, visual and verbal processing of two different senses of modalities. Wright (1989) and Wallace (1988), are also in concurrence that picture like diagrams and animation provide learners with invaluable information in helping them to create visual information in their working memory. Mayer and Sims (1994) expounded that performance that is produced by students at the end of this process illustrates the learner's response to tests of retention and transfer. Mayer and Anderson (1992) also proposed that value and effect of the multimedia presentations in facilitating language learning environments is related to the generative theory of multimedia learning drawn from Paivio's (1991) dual coding theory. The theory assumes that humans possess two distinct information processing systems; one that represents verbal and the other visual. In relation to the effectiveness of the multimedia, learners learn to construct referential connections between the two forms of mental representation systems, namely the verbal and visual representations. The researchers concord that the wave of the future in education is through multimedia based modes of instruction. Strong claims are being made for the potential of multimedia learning environments as cognitivist's acknowledge that different kinds of minds open up enormous educational opportunities.

The overarching theme of this paper is grounded upon Gardner's Multiple Intelligences theory and the effective use of new instructional technologies.

Urban & Rural Comparatives:

Student achievement gaps between urban and suburban regions are a major issue in U.S. schools. Technology enhanced learning environments that support teaching and learning process with advanced technology may close this achievement gaps. This paper examines the impact of student and school factors with an emphasis on schools' geographic location on student achievement in the Cisco Networking Academy, a technology enhanced learning environment. The instructional model in the Cisco Networking Academy combines face-to-face learning with online curriculum and instructional materials that are distributed over the Internet so that all instructors and students receive the same instructional materials and content tests. 4,670 students from 386 high schools participated in this study. Considering gender, ability and motivation factors, results showed that students located in different geographical locations do equally well in the networking program. The results concluded that this combination of technology-enhanced classroom learning environment help students in different regions to achieve equally good results in the program, which is promising to bridge student achievement gaps despite varied geographical regions. This report, published by the Australian Council for Educational Research (ACER), is part of the Longitudinal Surveys of Australian Youth (LSAY) research program.

A review of the available research relevant to the pupils showed that they are affected by several areas to become disadvantaged. The low socioeconomic status is a characteristic of prime importance, particularly in view of the relationship between economic status and school achievement for rural as well as urban children.

Objective of the Study:

This study hopes to discover how learners can be empowered to learn English in the English for Management class through identifying their intelligence profile. It will further determine whether using multimedia together with the incorporation of Multiple Intelligences (MI) will make learning pleasurable. Hence, it is hoped that the infusion of the multifaceted tasks using MI will enable learners to write well in their report writing class assignment. Specifically, this study investigates the extent to which the multiple intelligence teaching style has a positive impact on the performance of students. Lastly, this study hopes to discover is there a significant distinction between rural and urban students' writing performance after MI induction.

Significance of the Study:

The current research will have a significant influence on the design of lessons for the English for Management subject for both urban and rural students. English language learning is difficult for these students as learners have minimal language proficiency and are generally weak in their academic writing. Additionally, the sudden change in the medium of instruction from Mandarin or Bahasa Malaysia in schools to English at the university poses a problem to them. Faced with these tribulations, students find English language learning uninspiring. Lessons can only be interesting and pleasurable if learners are aware of their intelligence profile and teachers design the English lessons based on students' intelligence profile. This study may have significant implications on learners' learning and teachers' teaching styles at UTAR's urban campus in Petaling Jaya and principally in its rural campus in Kampar.

Methodology:

Since the objective of the study required empirical work that involved a comparative analysis of the regular and multiple intelligence teaching styles, methods and procedures adopted in the study must first be clarified. This is a cross-sectional study that incorporated a sample of 200 respondents. This was intended to evaluate the effectiveness of the regular and multiple intelligences teaching styles. All the 200 students were pursuing Business Studies at Tunku Abdul Rahman University. The unit of analysis is individual (students) and self-administered questionnaires were considered for gathering data at empirical level. The study considered the combination of closed-ended and open-ended questions as proposed by Hatch and Gardner (1993). This set of questions also included 1 to 5 point measurement using the likert scaling approach. Meanwhile, multiple intelligences quiz (Piper, 2002) was also used to further justify these findings. As to meet the requirements, a paired sample test was used to compare mean scores of the regular and MI teaching styles with regard to learners' performance in report writing.

The 200 respondents chosen for the study were required to go through two different assessments at different periods of time. First, they were given the regular teaching exposures then assessment was carried out accordingly. After obtaining their scores, the same group was given the multiple intelligences exposure followed by another assessment. It should be noted here that the method of assessment was highly structured and standardized for both exposures as to maintain a high degree of consistency in this inferential study. The details of the assessment methods are as follows;

Method of Assessment:

Each of the respondents was required to write a report (short/informal report) on various issues. For instance, it could be a progress report on work progress on a new product campaign, or even a recommendation/problem solving report on the frequency of accidents at a factory, etc. The total marks of 15% were awarded for language, content and format & organization (7%, 6% and 2% respectively). Specifically, the report was evaluated based on the following criteria;

- The ability to understand and identify the business or management-related issue
- Originality of analysis and ideas
- The ability to present content in a logical, coherent and well-structured report
- Written language competency

Procedure:

In view of the objective of the study, more systematic approaches were adopted in offering the multiple intelligences exposures to the 200 respondents who already experienced the regular teaching style. A lesson each was conducted in ESP classes in the urban and rural setting, which culminated in a report writing activity. In these lessons divergent thinking was encouraged through the various activities, while integrated aspects of linguistics were used for the completion of tasks at hand. To further encourage pleasure in learning, multimedia concepts were used. As the study incorporated a 10 minute multimedia presentation lesson in the screening of a global warming event, a review of multimedia is discussed. The researchers incorporated multimedia elements as one of the vital approaches in this lesson. The lesson was designed with the assistance from a visually presented animation and verbally expounded narration on Global Warming entitled 'An Inconvenient Truth'. Besides, the lesson also included music as a part of the multimedia element whereby students were asked to listen to the theme song of the video presentation 'An Inconvenient Truth' by Melissa Etheridge. All these created a pleasurable learning environment for the students. As explained above, the respondents were then required to write a report as instructed in the question paper. The whole idea of doing this was to examine the extent to which these multiple exposures would help the respondents (students) to improve on report writing. Hence, their marks (over 15%) were recorded based on the regular teaching style, and then followed by the marks based on the multiple intelligences teaching style. Finally, two sets of data series were obtained from the same sample of 200 respondents. The contents of the lesson or course outline on multiple intelligences that were distributed to the respondents. In addition, the respondents had to answer a set of multiple intelligences quizzes adapted from Carla Piper, 2002 and a self-administrated questionnaire of MI lesson.

Results:

Based on Table 1below, demographic profiles of respondents are shown in two different settings, urban and rural with a sample size of 200. It seemed that there were 116 respondents from urban and 84 respondents from rural area. The study also confirmed that students felt that knowing their individual intelligences profile would help in their own learning process as 97 per cent of the respondents agreed to this statement.

Table 1: Demographic Profile of Respondents

Profile	Frequency	Percentage (%)
Setting		
Urban	116	58
Rural	84	42
Total	200	100
Intelligences in Learning		
Yes	193	97
No	7	3
Total	200	100

Table 2 shows the eight types of intelligences, which are verbal linguistics, logical mathematical, visual special, bodily kinesthetic, musical, intrapersonal, interpersonal and naturalistic. Based on the investigation on individual components using the mode option, students ranked visual spatial and interpersonal components as number one, which were regarded as the most important or frequently chosen components. However, based on the overall mean score, interpersonal was the most used intelligence, followed by visual spatial, musical, verbal linguistics, logical mathematical, intrapersonal and bodily kinesthetic. Naturalistic is the least used intelligence. Mean scores are given in parenthesis.

Table 2: Use of Intelligences

No	Intelligences	Ranking (Mode)	Ranking	Frequency	Percentage
			(Mean)		(%)
1	Verbal linguistic	4	4(4.42)	45	23
2	Logical mathematical	4	5(4.47)	45	23
3	Visual spatial	1	2(4.01)	45	23
4	Bodily kinesthetic	5	7(4.75)	39	20
5	Musical	2	3(4.26)	48	24
6	Intra-personal	3	6(4.49)	55	28
7	Inter-personal	1	1(3.95)	52	26
8	Naturalistic	6	8(5.25)	45	23

Table 3 below shows a comparison between Multiple Intelligence Teaching Style and Normal Teaching Style. It seemed that 97 per cent of the respondents agreed that the use of multiple intelligences teaching style was more interesting compared to the conventional teaching style (12 per cent). In addition, students also agreed that multiple intelligences activities were more interesting. Besides, the multiple intelligences lesson had more varied activities. Moreover, they agreed the multiple intelligences lesson was student-centred whereby it gave students more opportunities to participate actively in the classroom. Lastly, students found learning English incorporated with multiple intelligences far more pleasurable.

 Table 3: Comparison between Multiple Intelligence Teaching Style and Normal Teaching Style

Details	Frequency	Percentage (%)
Interesting		
Multiple Intelligences		
Yes	194	97
No	6	3
Regular Method		
Yes	24	12
No	176	88
Total Respondents	200	100
Activities		
Multiple Intelligences		
Yes	197	98
No	3	2
Regular Method		
Yes	18	9
No	182	91
Total Respondents	200	100
Student-centred		
Multiple Intelligences		
Yes	162	81
No	38	19
Regular Method		
Yes	42	21
No	158	79

Total Respondents	200	100
Pleasure		
Without Multiple Intelligences		
Yes	121	60
No	79	40
With Regular Method		
Yes	170	85
No	30	15
Total Respondents	200	100

Table 4 below shows mean scores of the various components of teaching styles. Item 1-10 were measured on a 5-point likert scaling (minimum is 1 and maximum is 5). Melissa score (is a song) was ranging 1-10 points. Item 12-17 referred to assignment marks obtained on memo writing activities involving the regular and multiple intelligences methods.

Table 4: Summary of mean scores of the teaching styles

Item	Details	Score
1	Multiple Intelligences in learning	3.98
2	Multiple Intelligences in writing	3.77
3	Verbal linguistic	2.46
4	Logical mathematical	3.04
5	Visual spatial	2.17
6	Bodily kinesthetic	2.07
7	Musical	3.09
8	Intra-personal	3.42
9	Inter-personal	3.21
10	Naturalistic	1.84
11	Melissa score	7.90
12	Urban Regular Style	10.68
13	Urban Multiple Intelligences	11.68
14	Rural Regular Style	10.63
15	Rural Multiple Intelligences	11.58
16	Both Urban and Rural Regular Style	10.94
17	Both Urban and Rural Multiple Intelligences Style	11.79

Table 5: Paired Sample T-test: Rural and Urban Settings

Pair	Setting	Mean	N	Significance
1	Rural Reg-	10.63	84	0.000
	Rural MI	11.58	84	
2	Urban Reg-	10.68	116	0.000
	Urban MI	11.68	116	
3	Urban Reg-	10.60	84	0.891
	Rural Reg	10.63	84	
4	Urban MI-	11.60	84	0.920
	Rural MI	11.58	84	
5	Combined Reg-	10.94	200	0.000
	Combined MI	11.79	200	

Table 5 presents the results of the paired sample t-test between rural and urban settings. It seemed there was a significant difference between regular and MI in the rural area at significance level 0.05 (p- value = 0.000), similarly, a significant result was obtained in the urban area at 0.05 (p- value=0.000). However, scores of both regular and multiple intelligences styles did not significantly differ in urban and rural settings. As a whole (combining rural and urban scores), there was a significant difference between regular and multiple intelligences styles.

Discussions:

It has been noted that knowing learners' intelligence profile does enhance English language ability because the teachers could easily design their teaching materials which are usually faculty-made to suit students' most inclined intelligences as ranked in Table 2 (1 is the highest, 3 is average and 6 is the lowest). This definitely will be very helpful for teachers especially in designing ELT teaching materials which are appealing to teachers and students. Besides, the wide range of opinions in regards to the textbooks also confirms the assumption that every teacher is unique and has different styles, preferences, and interests (Thurairaj and Roy, 2012). Furthermore teachers and learners can be motivated through the use of visuals in designing their ELT materials as it has great potential to apply design at many different aspects or categories states Norman (2005). Indirectly it gives motivation to engage in a positive learning to students. According to Gardner (1985), the term motivation in

language learning context is seen as 'referring to the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity'. Usually for language teachers, effectiveness of the ELT materials will indirectly motivate them to continue learning and teaching at tertiary levels.

It is proven that multiple intelligence (MI) teaching style is much preferred compared to normal teaching style which has been shown in Table 3. It seems multiple intelligence teaching style is more student-centered compared to regular method which is basically teacher-centered. In today's tertiary level teaching, students would like to equally contribute to learning and teaching in the classroom setting. Research on multimedia with the incorporation of MI has proven to contribute positive effects whereby the power of multimedia lies in the fact that it is multi-sensory, which stimulates many senses of the learners. In short it is also interactive, enabling the teachers to control the flow of information. This has introduced important changes in the educational system and impacts the way teachers communicate information to the learners (Neo and Neo, 2000).

In addition, students enjoy the activities incorporating multiple intelligences in their teaching as shown in Table 3; especially the multimedia such as video screening and music make it a pleasurable learning and teaching experience for learners.

Conclusion:

The article examines how the concept of multiple intelligences can be integrated into the ESP classroom to discover how it impacts the writing performance of both urban and rural students. It was noted that students felt that knowing their individual intelligences would help their individual learning process. However, students chose certain intelligences in their learning exploration as the interpersonal intelligence proved to be the most used intelligence, followed by visual spatial, musical, verbal linguistics, logical mathematics, intrapersonal and bodily kinesthetic. Naturalistic was the least used intelligence. On the other hand through this study it was also proven that students agreed that multiple intelligences teaching style and activity were more interesting compared to normal teaching style. Besides, the students also confirmed that multiple intelligence lessons were student-centered whereby it gave them more room to participate actively. Most importantly, students loved learning English with incorporation of multiple intelligences as it was really engaging. Lastly it could be concluded that scores of both regular and multiple intelligences styles did not significantly differ in urban and rural settings. However when rural and urban scores were combined there was a significant difference between regular and multiple intelligences styles. In brief, incorporating multiple intelligences and multimedia in the teaching of English for Management in UTAR does play an important role however, it is not significant in terms of the settings (urban or rural).

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