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Conceptual Motivation and the Teaching of Figurative Language

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Abstract
Idiomatic expressions often present difficulties for L2 learners due to their semantic opacity and seemingly arbitrary selection of their lexical components. Recent studies in cognitive linguistics, however, have revealed that a large number of idiomatic phrases are semantically motivated. Like other types of figurative expressions, idioms can be viewed as instances of conceptual metaphors (CM), which are grounded in physical and social experience. The present study explores whether raising the learners' awareness of the underlying conceptual metaphors will help them retain the meaning and the form of the idiomatic expressions and whether this approach will have the same effect on the visual and auditory students. Two different learning conditions are compared: 1) idioms grouped by CM with definitions provided in Japanese (students' L1) and 2) semantically unrelated idioms with definitions provided in Japanese. The results of the study suggest that regardless of the learning style, semantic grouping of idiomatic expressions facilitates their retention.

Keywords: Conceptual metaphors, idiom teaching, learning styles

Introduction

Idioms are usually defined as expressions whose meaning cannot be inferred from their constituent parts. They are frequently used in both spoken and written language. According to some estimates (e.g. Polio, Barlow, Fine, & Polio, 1977) native speakers of English may use as many as 20 million idioms in their lifetime.

This pervasiveness of idiomatic language in authentic discourse presents difficulties for L2 learners. Due to limited vocabulary size, learners are often not familiar with the lexical components of the idiomatic phrases. Furthermore, even if they know the literal meaning of the words, learners may not be able to understand their figurative usage (Boers, Piquer-Piriz, Stengers & Eyckmans, 2009). Finally, due to their underdeveloped metacognitive strategies, learners often fail to detect their miscomprehension of the input. Therefore, it is difficult to believe that learners will be able to pick up idiomatic language through sheer exposure through authentic input. This means that idiomatic language should be given explicit attention in the language

classroom. Idioms, however, are an often neglected segment of vocabulary instruction. As Irujo (1986) points out, many L2 teaching materials either ignore idioms entirely or do no more than list them as 'other expressions' failing to provide any opportunities for practice. One reason for marginalization of idioms may have been the alleged arbitrary nature of idiomatic language. Idioms were seen as 'dead metaphors', and rote memorization was considered the only way learners could master them (Boers, Eyckmans, & Stengers, 2007).

In recent years, however, research in phraseology and discourse analysis has resulted in a better understanding of what idiomatic language entails. Grant and Bauer (2004) identified two types of idiomatic expressions: 'core-idioms` which are non-compositional and non-figurative, and 'figuratives' which are more metaphorically transparent and can be traced back to their compositional elements. While core-idioms may have to be memorized, figuratives can be interpreted according to general cognitive principles.

One of the major contributions of cognitive linguistics to vocabulary teaching has been the substantiation of the non-arbitrary nature of figurative language. Lakoff and Johnson's (1980) discovery of *conceptual metaphors* (CMs) as underlying principles of human language, thought, perception and action, opened a new perspective on understanding figurative language. Conceptual metaphor is a term used to refer to the understanding of one idea, or conceptual domain, in terms of another. For example, in the expression 'prices are rising', *quantity* can be examined in terms of *directionality*. With identification of conceptual metaphors, it became clear that the choice of linguistic forms in figurative language, including idiomatic expressions, is at least to some extent semantically motivated. A large number of idiomatic expressions can be traced back to a limited number of source domains or metaphoric themes (Boers, 2000), forming a coherent system of metaphorical concepts. For example, expressions such as *to take one's chances, the odds are against one, to have an ace up one's sleeve* and so on, can all be traced back to one single conceptual metaphor: 'Life is a gambling game.' Although language users are not always consciously aware of conceptual metaphors, they have tacit knowledge of the metaphorical foundation of many idioms, which is reflected in consistency with which people interpret idiomatic phrases. In an experiment conducted by Gibbs and O'Brien (1990), participants were asked to form mental images of idioms that have very similar non-literal meaning (e.g., *blow your stack, flip your lid, hit the ceiling*) and then to answer a series of questions about these images. They found a high degree of consistency in people's

images and responses, which was attributed to the shared conceptual metaphors such as 'Anger is a hot fluid in the container'.

Since the late 1990s, a large body of experimental work has been conducted with the purpose of exploring how approaches grounded in cognitive linguistics could be applied to the teaching of L2 vocabulary and idiomatic language in particular. A number of studies (e.g. Boers, 2000; Csábi, 2004; Beréndi, Csábi, & Köveces, 2008) suggest that presentation of CMs leads to better retention of the target idiomatic phrases. One reason may be that CMs help learners discover semantic motivation behind the target expressions making them seen as being a meaningful part of a structured network rather than 'frozen', isolated pieces of language. The superiority of the CM approach could also possibly be attributed to its conduciveness to the creation of mental images. Conceptual metaphors are grounded in sensory experiences and in social and cultural practices and, as a result, they potentially make it easier for learners to visualize the input. According to dual coding theory (Paivio, 1971, 1986; Clark & Paivio, 1991), human cognition consists of two subsystems, one which deals with verbal information and the other which processes and stores visual input. While the two systems can be activated independently, they are connected through a complex associative network, allowing dual coding of information. The association of verbal information with a mental image enhances recognition of the content and its recall.

The effectiveness of the dual-coding of the input, however, is to some extent influenced by individual differences in imagery abilities. Individuals differ in their ability to generate images, clarity of the images they evoke and the frequency with which they may spontaneously engage in visual processing (Childers, Houston & Heckler, 1985). Low-imagers have been found to experience difficulties remembering spatial facts, visualizing geometric shapes or remembering the spelling of difficult words (Clark & Paivio, 1991).

The findings above raise some concerns about the effectiveness of instructional methods that can be conceptualized in terms of imaginal processes for learners with different cognitive styles. For example, Boers and his colleagues (2008) examined the effect of pictorial elucidation on idiom learning of students who are high and low imagers. They found that although visual input facilitated retention of meaning, it did not seem to enhance recollection of form of the target expressions and sometimes even had a distracting effect on visual learners. Similar results were obtained in the follow-up study reported in Boers et al. (2009).

The results above naturally open up questions about how the previously described potential benefits of the CM-based approach may be affected by the cognitive style of the learner. The present study was set to examine whether highlighting semantic motivation of the idioms by providing the relevant conceptual metaphors will have the same effect on visual and auditory learners.

Research hypotheses

The study was designed to test the following hypotheses:

H1: For visual style learners, an imagery-conducive CM-based approach will be more effective than the listing approach.

H2: Auditory style learners will perform better in the listing approach, which does not involve induced imagery.

Method

Participants

The study was conducted with first-year Japanese university students. The students were non-English majors and their level of English was intermediate (TOEIC scores between 430 and 545). Initially, there were 53 participants in the study. In order to determine their learning style preferences, a VAK (visual, auditory, kinesthetic) test of learning styles (Chislet & Chapman, 2005) was used. Based on their responses, the students were classified as visual, auditory, kinesthetic or mixed style learners. Data analysis in this study was based on the input from 37 students who were identified as either visual learners (26 students) or auditory learners (11 students).

Procedures

Treatment

The study compared acquisition of L2 idioms under two conditions: 1) idioms grouped by CMs and 2) listing of semantically unrelated idioms. In both conditions, the explanations were provided in Japanese (students' L1) because the previous research (e.g., Vasiljevic, 2011) suggests that learners perform better when CMs are introduced in their native language. As Lakoff and Johnson (1980) point out, the mechanism of metaphor is largely unconscious. Most people are not aware of the extent that conceptual metaphors shape human thought and speech, and fail to recognize the semantic motivation of idiomatic usage even in their native language. Therefore, it was expected that the notion of conceptual metaphors would be new to

the participants in this study. As implementation of any new approach is likely to bring about a certain anxiety and sense of insecurity, an effort was made to make the notion of conceptual metaphors as accessible to the students as possible. The use of L1 was intended to make CMs transparent to the learners so that they could see the connection between the lexical selection and the meaning of the target idioms.

Forty-eight idioms were included in the study, 24 in each condition. (A complete list of the target idioms is provided in the Appendix.) The idioms were taught six at a time in eight sessions.

The CM condition

At the beginning of the experiment, the students were introduced (in non-specialist terms) to the notion of conceptual metaphors. Two CMs were presented as examples: IDEAS ARE MONEY and LOVE IS MADNESSS. For *Ideas are Money*, the students were given the following examples: He's *rich* in ideas. That book is a *treasure trove* of ideas. He has a *wealth* of ideas. *Love is Madness* was illustrated through the following sentences: I'm *crazy* about her. She *drives me out of my mind.* He's gone *mad* over her. I'm just *wild* about her. At the experimental stage, the students were provided with the CMs in English and Japanese, Japanese translations of the target idioms and example sentences given in English. The translations were taken from the Japanese edition of the *Metaphors We Live By* (Trans. Watanabe, Kusunose & Shimotani, 1986).

The 'listing' group

In the 'listing' group where idioms were not semantically grouped, the definitions of target idioms were either taken from The Kenkyusha Dictionary of Current English Idioms (1964) or translated by a native Japanese speaker highly proficient in English. Like in the CM condition, the example sentences were given in English.

Tests

The participants in the study were tested twice. The first test was given immediately after the treatment, henceforth will be referred to as 'the immediate post-test.' The second test was given four weeks after the initial presentations of the idioms and it will be referred to as 'the delayed post-test.' Both tests had the same content and format, and consisted of two gap-filling tasks for which the students were given 15 minutes to complete. In the first task, the students had to complete sentences with a

suitable idiom from the list. The purpose of this task was to measure whether they had acquired the meaning of the target idioms (receptive knowledge test). The target idioms were presented in the neutral (dictionary) form (e.g. *to have an ace up one's sleeve)*, which meant that, in order to complete the sentences correctly, the students had to change verb tense, possessive pronouns, etc. In the second activity, the students also had to complete the sentences with a suitable idiom, but the target idioms were not provided, which meant that the students had to recall both their meaning and the form (productive knowledge test). In the following week, the students received the results. They could look at their mistakes and the teacher's corrections and ask questions. The activities were then collected and the students were not told that they would have to work with the same material again. Four weeks after the initial presentation of the idioms, the gap-filling tasks were re-administered to measure the medium-term retention of the target idioms. There was no revision of the expressions before the test. The delayed post-test was also conducted in eight sessions to ensure the same time gap between the two tests.

Scoring

In order to ensure the consistency of scoring, strict grading criteria were followed. The students were given the points only when all components of the target phrases were encoded. An omission of an article or a preposition would result in no points being scored. Transformation of the constituents that are fixed (e.g. replacing plural form with a singular form) was also treated as a wrong answer. No points, however, were deducted for wrong verb tense forms since they were considered to be grammatical errors, rather than lexical.

Results

The results of the study are reported in the following order. First, students' performance on the immediate receptive knowledge test is discussed. Descriptive statistics are reported first and then the statistical significance of the differences between the conditions and between the learning style groups is examined. The same procedures are followed for the delayed receptive knowledge test and for the two productive knowledge tests.

Receptive Knowledge Tests

Immediate receptive knowledge test. On the immediate receptive knowledge test,

both visual and auditory students scored better when the target idioms were grouped by their conceptual metaphors. On average, visual learners retained the meaning of 82.4% of the target phrases in the CM condition and 76.3% in the listing condition. Auditory learners remembered the meaning of 79.5% of the target idioms for which CMs were introduced and 76.8 % of the randomly listed idioms. Table 1 below displays the descriptive statistics for the test.

	Immediate post-test				Delayed post-test			
	CM		Listing		CM		Listing	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Visual Learners	19.77	1.66	18.31	1.59	17.04	1.54	15.15	1.26
Auditory learners	19.09	1.58	18.45	1.63	15.64	1.43	14.55	1.13

TABLE 1. Mean Values and Standard Deviations on Receptive Knowledge Tests

Statistical significance of the difference between the two conditions was established through a Wilcoxon signed-rank test, a nonparametric alternative to the t-test for correlated samples. For visual learners, the difference between the scores in the CM and the listing condition was found to be statistically significant [z=-3.71, p=.000]. For auditory learners, the difference between the two conditions did not reach the level of statistical significance at the .05 level [z=-.987, p=.323].

In order to compare performance across the two learning style groups, a Mann-Whitney *U* test was conducted. Neither in the CM condition, nor in the listing condition did the differences between the two groups reach statistical significance with z-values being [z=-1.30, p>.05] and [z=-0.86, p>.05] respectively.

Delayed receptive knowledge test. Overall the scores on the delayed post-test were lower than the scores on the immediate post-test. In the CM condition, visual learners were able to recall the meaning of 71% of the target phrases, while auditory learners completed the gap fills correctly in 65.2% of the cases. In the listing condition, visual learners scored 63.1% and auditory learners 60.6%. Descriptive statistics for the delayed receptive knowledge test are available in Table 1.

The results of the Wilcoxon test showed that for visual learners the differences between the scores in the CM and the listing conditions were statistically significant [z=-4.02, p<.05]. For auditory learners, the differences did not reach the level of statistical significance [z=-1.7, p>.05].

A Mann-Whitney test analysis showed that the differences between the two learning style groups observed in the CM condition were statistically significant [z=-

2.14, p<.05]. Visual learners had an average rank of 21.75, while auditory learners had an average rank of 12.50. In the listing condition, however, the differences between the two groups were not found to be statistically significant [z=-1.32, p>.05].

Productive Knowledge Tests

On both the immediate and the delayed productive tests students had lower scores than on the receptive tests which can be attributed to the more difficult nature of the task as well as the strict grading criteria applied. Descriptive statistics for the productive tests are displayed in Table 2.

	Immediate post-test				Delayed post-test			
	CM		Listing		CM		Listing	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Visual Learners	14.96	2.14	14.35	1.87	13.27	2.47	11.00	1.79
Auditory learners	13.64	1.86	13.27	1.62	11.64	2.34	9.73	1.68

TABLE 2. Mean Values and Standard Deviations on Productive Knowledge Tests

Immediate productive knowledge test. On the immediate productive knowledge test, both visual and auditory students performed better in the CM condition. Visual learners were able to correctly recall 62.3% of the target phrases, while for the auditory learners the average was 56.8%. In the listing condition, visual learners correctly completed on average 59.8% of the target sentences and auditory learners 55.3%.

The results of the Wilcoxon test showed that for visual learners the difference between the scores in the CM and the listing conditions was statistically significant [z=-2.64, p=.008]. For auditory learners, however, the differences in the scores in the two conditions were not found to be statistically significant [z=-.711, p>.05].

A Mann-Whitney test showed that the differences between the two learning style groups were not statistically significant. In the CM condition z=-1.68, p>.05, while in the listing condition z=-1.65, p>.05.

Delayed productive knowledge test. On the post-test given four weeks after the idiom treatment, visual learners were able to correctly recall 55.3% of the target phrases in the CM condition. In the listing condition, that number was 45.8%. Auditory learners correctly completed on average 48.5% of the sentences in the CM condition and 40.5% of the sentences in the listing condition. Descriptive statistics for the test are provided in Table 2.

The results of the Wilcoxon test indicated statistical significance of the differences between the CM and the listing test results in both groups of learner. For visual learners, z=-3.86, p=.000, and for auditory learners z=-2.69, p=.007.

The results of a Mann-Whitney test indicated statistical significance of the differences in performance of the two learning style groups in the listing condition only. In the CM condition z=-1.79, p>.05, while in the listing condition z=-2.12, p<.05.

Discussion and Conclusion

The present study attempted to examine whether highlighting semantic motivation of the L2 idioms would help learners remember them more easily and how the effectiveness of this approach may be affected by learning style variables.

Before the results of the study and their pedagogical implications are discussed, it is important to look at some limitations of this study. The experiment included a relatively small number of participants, particularly in the auditory group. The small representation of auditory students in the sample may be attributed to the ethnicity of the participants. Reid (1987) compared students from nine different background and found Japanese learners to be the least auditory of all the groups examined. In order to get a clearer picture about the possible role that learning styles may play in the effectiveness of the particular types of vocabulary treatment, it may be necessary to get a larger sample of participants preferably from different ethnic groups. In addition, the length of idiom treatment was relatively short and it did not entail sequenced repetition of the target input, which is considered to be one of the crucial factors in memory-trace formation (Pimsleur, 1967; Baddeley, 1990). Finally, the observed differences between the mean scores were not always statistically significant (which is not surprising considering the fact that, with a small sample size, the differences would have to be very marked to be significant at the .05 level). This means that the results of the study must be interpreted with caution.

Nevertheless, the data obtained provide some support for a cognitive semantic approach to the teaching of figurative language. Regardless of their learning modality strengths, the students had better results when the target idioms were semantically grouped and their metaphorical conceptualization was highlighted. The results also did not indicate that imagery induced by the CM approach distracted visual learners from acquiring the form of idiomatic expressions. Mean values on the productive test were higher in the CM condition for both groups of learners.

A better performance in the CM condition could be attributed to two factors. One is the higher level of organization that CM grouping provides. While in the listing condition, the target idioms were semantically unrelated, the introduction of CMs helps learners see that at least some idiomatic expressions are part of a structured network. They form sets of expressions that are related to various aspects of a certain concept, and the constituent words within the idiomatic phrases reflect the connection with that conceptual domain. Once learners see idioms as formative elements of a semantically motivated network, they can take advantage of general cognitive processes rather than rely on pure rote memorization to retain their meaning.

Better performance in the CM approach could also be attributed to its conduciveness in the creation of mental images. Highlighting CMs stimulates the creation of mental images, which facilitate the process of idiom interpretation. The association of verbal information with mental images provides learners with two pathways for processing the meaning of the target expressions, promoting their retention. Making the learners consider the semantic motivation behind idiomatic phrases also prompts them to engage in mental elaboration, which is known to facilitate long-term memory retention (Craik & Lockhart, 1972).

In conclusion, the results of this study suggest that highlighting the cognitive motivation of idiomatic expressions can aid in their retention. The CM approach draws on universal cognitive processes conducive to learning regardless of whether learners' strengths lie in the visual or auditory modality.

In order to help learners take advantage of this approach, it may be necessary to explicitly draw their attention to the metaphorical basis of many idiomatic expressions. Although CMs have psychological reality (i.e. they exist in the minds of language users), that knowledge is usually tacit, and therefore, it is unlikely that learners can naturally transfer it to L2 contexts. Furthermore, different linguistic communities have different compositions in terms of idiom repertoires, which are often a result of their cultures and histories (Boers, Demecheleer & Eyckmans, 2004). Making students aware of the source domains and contexts from which particular L2 idioms originated should help them to see motivation behind a particular set of figurative expressions facilitating their retention and to develop a better insight in the ways the speakers of the target language community conceptualize the world. It is hoped that the results of this study will encourage instructors to further explore the ways in which conceptual metaphors can be exploited in foreign language teaching.

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APPENDIX
Target Idioms

Idioms grouped by conceptual metaphors

IDEAS ARE FOOD
1. to leave a bad taste in one's mouth
2. to smell fishy
3. to sink one's teeth into something
4. food for thought
5. to spoon feed
6. on the back burner

LOVE IS A JOURNEY
1. at a crossroads
2. to go one's separate ways
3. dead-end-street
4. to spin one's wheels
5. on the rocks
6. off the track

LIFE IS A GAMBLING GAME
1. to take one's chances
2. the odds are against one
3. to have an ace up one's sleeve
4. to hold all the aces
5. to be a toss-up
6. to play one's cards right

MORAL IS CLEAN
1. to have clean hands
2. to have blood on one's hands
3. to catch somebody red-handed
4. to be squeaky clean
5. to do the dirty on someone
6. to dish the dirt on someone

Idioms taught through definitions only
1. to cook the books
2. to let off steam
3. to ring a bell
4. to tighten one's belt
5. to play it by ear
6. to set the ball rolling
7. to skate on thin ice
8. flash in the pan
9. to race against the clock
10. the bone of contention
11. feather in one's cap
12. to step on someone's toes
13. to pull one's socks up
14. to put your finger on something

15. to have an axe to grind
16. to stab somebody in the back
17. to hear something through the grapevine
18. to have egg on one's face
19. to put the cart before the horse
20. to lay one's cards on the table
21. to take the bull by the horns
22. to open up a can of worms
23. to put one's foot in one's mouth
24. to burn the candle at both ends

Socialization, Gender Theory and English Textbooks in Iran

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Bio data

Vahid Mahmoudi Gahrouei is a visiting lecturer in the Faculty of Language and Literature, Islamic Azad University, Shahrekord Branch, Iran. He is currently a PhD student in applied linguistics. He obtained his MA from Yazd University, Iran. His research interests include L2 acquisition, discourse analysis, and educational psychology.

Abstract

Textbooks are vital means of mass media in the society and have a unique place in the instruction of the learner. Textbooks are potent instruments which help in building up desirable attitudes in learners (Sumalatha, 2004). They remain one of the versatile agents of socialization in the society. School textbooks as mass media and a gender socialization agent play an important role in shaping the learners' view of female and male genders in the society. Gender responsiveness is one of the current issues that have attracted major debates in different arenas including in the education system in general and textbook publishing in Iran in particular. This case study examines the portrayal of gender images in school English textbooks published by the Textbooks Compilation Bureau of the Education Ministry of Iran. The findings show under-representation of female gender in authorship, editorship, typesetting and illustrating the textbooks. They further show that male gender outnumbers the female gender in the use of characters in illustrations, names and titles used to refer to the genders.

Key words: Socialization, gender theory, textbooks, mass media, society

Introduction

Textbooks are vital means of mass media in the society. Teachers and learners view textbooks as sources of authority. In some cases the textbook is taken to be the gospel truth. Obura (1994) notes that the textbooks are key instructional materials. Textbooks have a unique place in the instruction of the learner. Textbooks are the most potent instruments, which help in building up desirable attitudes in learners. (Sumalatha, 2004). They remain one of the versatile agents of socialization in the society. Textbooks are the sources of information in teaching and at the same time play the role of image forming. According to Mkuchu (2004) textbooks shape attitudes by transmitting a society culture. Gender images and roles are a crucial part of any culture, therefore, the manner in which female and male genders are portrayed in

textbooks contribute to the type of images that learners develop of males and females in the society.

Various declarations and resolutions have been made and numerous conferences held aimed at promoting gender equity in the education system. For example, the 1979 Convention of Elimination of All Forms of Discrimination against Women (CEDAW) recognized the need to eliminate gender stereotypes in education and more specifically in textbooks. The convention resolved, among other resolutions that, "Any stereotyping concept of the roles of men and women at all levels and in all forms of education should be eliminated in particular by revision of textbooks and school programes" (UNO, 1979, p.7).

Despite this resolution, gender stereotypes continue to persist in some textbooks. This is in spite of the fact that textbooks are crucial tools in the teaching and learning process. Textbooks are basic carriers of the content that is delivered to the learners at various levels of learning. Towards this end, it is accepted that, school textbooks are the instruments, which play a very important role in preparing the future actors in society by shaping their attitudes and giving them a direction in life (Mbilinyi, 1996). The school system is an important socializing agent hence textbooks are vital means of mass media to propagate society values and aspirations. English is learned as a foreign language in Iran and it could be said that it may have a little effect on Iranian learners' socialization patterns, but this study will attempt to determine how efficiently English textbooks have been used to make the learners familiar with English culture.

Theoretical Inclination

The study is guided by the views expressed within gender theory. Gender theory recognizes equal potential while allowing for differences between the genders (Handrahan, 2005). Over the years, most studies or research have used various brands of feminism as a basis for theoretical framework. Feminism as a theory has its own limitations as far as gender analysis is concerned. Gender theory is a more comprehensive feminism that includes men and women.

Gender theory investigates the social organization of sexual differences, constructed and inherent. Gender is ascribed normative aspect, focused around the human concept of sex, a biological, physical division that extends to a broad social construction informing, shaping, limiting ways of being both masculine and feminine. Feminism began with acknowledging and understanding the position of women.

Gender theory, an outgrowth of its ideological feminist base, is the next step that acknowledges and understands how bringing women into research projects illuminates, shapes and defines men and masculinity (Handrahan, 2005).

Gender theory seeks to understand the roles, implications and potential of male and female interaction. It is the sum of three key aspects. These aspects are women's lives, men's lives and of male and female interactions.

Methodology

This is a descriptive study using both quantitative and qualitative approaches. English junior high school textbooks in Iran formed the population for this study. Content analysis of male and female images was used in analyzing the portrayal of female and male genders in the 3 sampled English junior high school textbooks. In the content analysis of the English textbooks, to determine the depiction of gender images, illustrations and text were examined. The following categories were selected for analysis in the textbooks to investigate the portrayal of gender images:

- Composition of staff involved in the process of production of the textbook.
- Frequency of occurrence of male and female characters in the textbooks.
- Occupations, roles and other related activities.
- Language use in relation to female and male characters.

The English textbooks in Iranian junior high schools published by the Textbooks Compilation Bureau of the Education Ministry are the *"Right Path to English"* series from one to three. All three series of three different levels were selected to participate in the study. It is important to base selection on various levels because the members of the authors' panel for each level were not the same and even the number of authors in each level differed. Because of this it was imperative to study various levels of the textbooks to find out how the different authors portrayed gender images in their titles for a balanced and critical analysis and conclusion.

The following English textbook series were content analyzed in this study:

- *Right Path to English: Book One*, by P. Birjandi and A. Soheli. Published by Textbooks Compilation Bureau of the Education Ministry, 2003.
- *Right Path to English: Book Two*, by R. Sohelizade and A. Norouzi. Published by Textbooks Compilation Bureau of the Education Ministry, 1996.
- *Right Path to English: Book Three*, by J. Ghanbari and A. Norouzi. Published by Textbooks Compilation Bureau of the Education Ministry, 1996.

Results

The results of the findings of the study have been presented in tabular form. This includes categories of frequency of occurrence of female and male characters, occupations and language use with a focus on gender perspective. Also presented in the form of tables are figures related to personnel involved in textbook production namely the authors, editors, artists and designers. Percentages are also used to give a comparison between female and male characters as portrayed in the textbooks.

Textbook publishing involves various people at various stages. The personnel discussed in relation to this study are the authors, editors, artists, photographers and designers. The basic stages involved in textbook production include:

• Studying and interpreting the curriculum

• Identifying and commissioning authors

• Receiving and acknowledging the manuscripts

• Assessment of manuscripts

• Proofreading

• Substantive editing

• Design, layout and typesetting

• Drawing of illustrations

• Printing

This study focuses mainly on those personnel who have a direct contact with the manuscript development before it is printed into books. These are authors, editors, artist and designers. The following tables show the number and percentage of personnel and their gender who were involved in the production of the English textbooks.

Class	Total	Male	%	Female	%
1	2	2	100%	0	0%
2	4	3	75%	1	25%
3	5	3	60%	2	40%

Table 1. Authors involved in writing of the textbooks

Class	Total	Male	%	Female	%
1	1	1	100%	0	0%
2	1	1	100%	0	0%
3	1	1	100%	0	0%

Table 2. Editors involved in editing of the textbooks

Class	Total	Male	%	Female	%
1	2	1	50%	1	50%
2	2	2	100%	0	0%
3	2	2	100%	0	0%

Table 3. Artists involved in drawing illustrations of the textbooks

Class	Total	Male	%	Female	%
1	1	0	0%	1	100%
2	1	0	0%	1	100%
3	1	0	0%	1	100%

Table 4. Designers involved in layout and typesetting the textbooks

Data in Table 1 show that majority of the writing staff for the textbooks are men. Looking at the composition of the writing staff of the textbooks, it can be inferred that females are underrepresented in the authorship of junior high school textbooks in Iran. This could be attributed to societal attitudes toward women. Due to traditional gender biased societal attitudes, very few women participate in writing school textbooks. The reason why is that, in the past, men had more access to education than women.

Under-representations of female personnel are also featured in other textbook production levels as shown in Tables 2 and 3. From the data above, male personnel dominated these crucial textbook production stages except the typesetting stage in which women dominated with a clear 100%. I think that this is because of women's know-how in typesetting. Absence or under-representation of female staff especially at crucial levels has a bearing on the portrayal of female and male characters as will be seen in subsequent sections.

Frequency of Occurrence of Characters in English textbooks

In this study, the calculation of frequency of occurrence of male and female characters has been determined using illustrated characters. The portrayal of female and male characters in illustrations is as shown in Table 5 below.

Class	Total	Male	%	Female	%
1	150	110	73.37%	40	26.63%
2	256	174	67.97%	82	32.03%
3	319	229	71.79%	90	28.21%

Table 5. Frequency of Appearance of Characters in textbooks

Data in Table 5 show that the total number of male characters outnumbers female characters in all of the three textbooks analyzed in this study. The dominance of illustrated male characters in frequency of occurrence can be attributed to the male artists who did the illustrations. As was shown in Table 3, the artists participated in the textbook production were mainly male. The male artists may have perpetuated male chauvinism through their illustrations. This could be due to the possibility that the artists were not trained on the need to incorporate gender responsiveness and equity in their illustrations.

Frequency of Occurrence of Male and Female Names in textbooks

This section examines the use of names that refer to male and female characters in the three English textbooks analyzed in this study. According to Kabira and Masinjila (1997) naming and not naming is instrumental in shaping attitudes and perceptions towards characters in a text. Here some questions need to be considered:

1. Which characters are designated by gender?
2. Which characters are not designated by gender?
3. Which characters are named?
4. Which characters are not named?

Based on the above questions, data in Table 6 show the frequency of appearance of proper nouns or name of male and female characters in the three analyzed textbooks.

Class	Total	Male	%	Female	%
1	93	54	58.06%	39	41.94%
2	198	107	54.05%	91	45.95%
3	243	139	57.21%	104	42.79%

Table 6. Frequency of Occurrence of Male and Female Names

A close look at the data in Table 6 reveals that there are more male names mentioned in the English textbooks compared to the female names. Interesting in the study is that when titles *'Mrs.'* and *'Mr.'* are used, it is the Mr. title that comes first. The female title is placed in the second place, which is the traditional society's position that women have been assigned. Name is very essential as a tool of identify and the lower number

of named females in the textbooks may be detrimental to female pupils' learning of the English language which they may interpret to be a male's language.

Portrayal of Characters in Occupational Roles in Textbooks

According to Kabira and Masinjila (1997), activities that human beings are involved in can be categorized into three. These are productive activities, which are done to produce goods and services for production. Secondly, reproductive activities, which include collecting water, nursing children and cooking which are performed at home for maintenance of the family. Thirdly are community activities done for general community welfare.

Productive Roles	Male	Female	Reproductive Roles	Male	Female
Teaching	11	3	Washing utensils	0	8
Sports	9	0	Playing football	5	0
Secretarial duties	0	2	Buying items	3	9
Selling items	6	2	Planting	2	6
Driving	7	0	Cleaning	1	6
Building	5	0	Hosting	2	4
Farming	4	0	Birthday celebration	3	3
Total	42	7	Total	16	36

Table 7. Reproductive and Productive Roles by Gender in Textbooks

Data in Table 7 shows various interpretations of occupational roles based on gender. From the table it can be deduced that more men than women are pegged to productive activities which are paid for. The data also reveals that more women than men are portrayed performing reproductive roles, which are not remunerated. More men are depicted in more prestigious occupations. More women are portrayed performing less esteemed occupations.

Language Use and Gender Images in Textbooks

Most of the language that learners acquire during their schooling especially in English is through their teachers and the textbooks. Lakoff (1993) argues that society is reflected in the language, with values and assumptions held by the society being mirrored in the language.

A close scrutiny of aspects of grammar in English textbooks of Iran' junior high schools reveals that there is little gender biased language used against the female gender. However, in some instances language used portrays women in their traditional feminine roles that the society has assigned them over the years. Examples include:

1. My mum is cooking lunch. We have some guests today. (Book 3, p. 43)
2. She washed the dishes yesterday. (Book 2, p. 62)
3. Ali's sister is in the kitchen. (Book 2, p. 31)

The above sentences capture the society' perception and attitudes towards women of which the authors are products of the society. From the English textbooks content analyzed, the masculine pronouns outnumber the feminine. This can be attributed to overrepresentation of male characters as illustrations and proper nouns especially names of the male gender in the textbooks.

Conclusion

Excessive use of masculine characters, names, pronouns and titles prohibits females from identifying with the text and illustrations. Consequently, females will have reservations towards the textbooks and finally develop negative attitudes towards the subject concerned.

There are various factors that can be attributed to gender images that are evident in junior high school English textbooks in Iran. First, publishers lack assessment checklists to identify gender stereotypes in the textbooks. Secondly, the evaluation guidelines emphasize more on the contents of the topics and conformity to curriculum. Thirdly, more personnel involved in textbook production are men. Finally, lack of regular in-service training on gender issues on the part of staff involved in textbook production. Such studies reveal that textbooks have a powerful socializing effect on learners regarding their attitudes towards gender roles.

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Exploring Changes in English Teaching Techniques and Learners Response

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Abstract
English in Action (EIA), is a language development program in Bangladesh working to enhance students' English language competence and performance. EIA is initiating various teaching learning techniques in the English language classroom such as group work, pair work, role playing, and choral dialogue. During the pilot phase, the project trained English language teachers at 21 Upazilas (sub-districts) across the country. This paper will investigate those teaching techniques, specifically, at the secondary level of English classes. It will explore the viewpoint of the students as to how EIA is impacting on their learning English. For collecting data, a teachers' questionnaire, students' questionnaire, semi-structured interviews of teachers, and group interviews of students were conducted in the EIA intervention schools. The data collected from Kapasia Upazila of Gazipur district in Bangladesh are the basis of analysis. For collecting data five out of ten EIA intervention high schools were selected randomly. Ultimately, this paper will come up with an attempt to draw a picture of the EIA teaching / learning techniques in the English language classrooms with students' responses toward these practices.

Introduction

Language can be defined as a code when two or more people use it to communicate with each other (Wardhaugh, 1993). According to Randolph Quirk, British political imperialism had sent English around the globe, during the nineteenth century, so that it was a language 'on which the sun never sets' (Quirk in Crystal, 2003, p. 10). The dominance of one language over other languages which can be called language imperialism is a critical issue. The ascendancy of English comes first in regard to linguistic imperialism. Phillipson (2003) states, "English linguistic imperialism is that the dominance of English is asserted and maintained by the establishment and continuous reconstitution of structural and cultural inequalities between English and other languages." (Phillipson, 2003, p. 47). As a result of political change in Europe,

French, Italian and English gained in importance in the sixteenth century (Richards and Rodgers, 2002).

The series of political and socio-economic changes like, the British period (1700-1947), the partition of East and West Pakistan in 1947 and the Birth of Bangladesh in 1971 have greatly influenced the learning of English language in Bangladesh (Kamaluddin, 2008). In Bangladesh, the status of English is 'English as a Foreign Language' (EFL) "where English is almost always not spoken outside the classroom in public. Therefore, EFL students have fewer chances to practice with native speakers because the language outside the classroom is not English" (Thornton, 2009, p. 13). English is studied to meet specific purposes in the education system of Bangladesh, such as to provide overseas employment, to help to transact foreign trade and commerce and to facilitate higher studies (Ainy, 2001). There are a lot of problems and weaknesses in the English education of Bangladesh. The main weaknesses of English language teaching in Bangladesh are poorly paid and qualified teachers, a weakly coordinated educational system, reliance on meaningless rote learning, and a gap between assumed and actual student proficiency levels (English Teaching Profile: Bangladesh – ERIC, 1986). Realizing the absurdity of English education in Bangladesh many programs took attempt to promote English teaching – learning process, among which English in Action is one.

English in Action (EIA) is a language development program which is working in Bangladesh to overcome students' problems in learning English. It aims to implement the communicative approach through some innovative techniques and materials. This paper aims to look at those techniques and wishes to portray students' view about those changed trends in learning English.

Background

In Bangladesh languages are sensitive and sentimental issues, which have a unique history of sacrificing lives for protecting its national language, Bangla (Hamid, 2006; Mohsin, 2003; Musa, 1996 in Hamid, 2008-2009). The study of English language teaching has a history of about two hundred years. The merchants of the East India Company, to whom a charter was given by Queen Elizabeth I on December 31, 1600 to trade with India, brought English to the Indian subcontinent. Then English was used in the elitist administrative services, the armed forces, the court of justice and medium of instruction as well as a school subject in the education system throughout the nineteenth century and soon became associated with prestige, status and

superiority in the Indian subcontinent (Rahman, 1996). After the partition of Pakistan in 1947, English was studied as a compulsory subject at the secondary and higher secondary levels of education and was also used as a medium of instruction at higher levels of education and was the medium of communication with the outside world (Rahman, 1999).

English suffered a serious slow down after the birth of Bangladesh in 1971 because of a strong patriotic emotion for the mother tongue, Bangla and the Bangla Introduction Law, which was propagated in 1983 by the government of Bangladesh. By that law Bangla was made compulsory for employees in government, semi-government and autonomous institutions to use in interoffice memos, legal documents and correspondences except in case of communication with foreign governments, countries and organizations. Thus English lost its previous prominence. Students were uncomfortable to read their textbooks in English or express their thoughts and ideas in English because of their coming to the University for Higher Studies with an inadequate command of English (Rahman, 1999). Nonetheless, the significance of learning English was realized in the case of development soon and now-a-days the importance English in every sector is acknowledged. English was introduced as a compulsory subject from grade I to grade XII on 19 January, 1989 (Rahman, 2005).

According to the government of Bangladesh (1977), the aim of English teaching is "to increase producing the skilled people needed to increase productivity and equipping students with necessary tools in higher education....." and also to help students to be able "to control of the four skills and to use this skills in real-life situations outside the school when necessary" (in Rahman, 1996, p. 45). With the help of the Department of International Development (DFID), in 1995 National Curriculum and Textbook Board (NCTB) introduced new syllabus and textbooks based on Communicative Language Teaching (CLT) for the students of secondary level to meet that goal (Roshid, 2008-2009). But unfortunately CLT was launched in the curriculum and textbook from primary level to secondary level without any training of the teachers.

So, the purpose of communicative approach has not been achieved and the situation is still on-going (Barman et al., 2007). Many opine that communicative language teaching does not work well (Rahman, 1996; Rahman, 1999; Maleque et al., 2004; Sadek et al., 2006; Sultana & Nahar, 2008; Roshid, 2008-2009). There are four skills to be developed by communicative approach but "even if students are capable of reading and writing a foreign language, they cannot prove their efficiency in

listening and speaking" (Rahman & Begum, 2006, p. 31). There is hardly any practical class for practicing listening and speaking in English. They hardly get facilities for developing listening and speaking skills of English language. Another reason behind the problem in English education is the traditional evaluation system of English education in Bangladesh. Without practical examination listening and speaking skills cannot be measured. But the students have to write on paper in the English examination as the education system follows written assessment system which is a barrier to develop the total English skills of students.

Many efforts like, English Language Teaching Improvement Project (ELTIP), Secondary Education Quality and Access Enhancement project (SEQAEP), Teaching Quality Improvement in Secondary Education Project (TQI-SEP), Complementary Sector Reform Project, Establishment of Foreign Language Training Center (FLTC) Project and Secondary Education Sector Development Project (SESDP), English in Action (EIA), The Open University (OU), British Council, BBC Learning English, BBC World Service Trust and Bangladesh Rural Advancement Committee (BRAC) are playing important role to increase the quality of English education in Bangladesh.

Among those language programs, English in Action (EIA) is a nine-year program and is funded by UKaid from the Department for International Development. It was formally launched on 11 March 2010. During the pilot phase, the project is engaged to train English language teachers at 21 Upazilas (sub-districts) across the country. It is designed to change the manner of learning English by young people and adults in Bangladesh. By using new approaches to English teaching and learning which will develop their language skills, EIA aims to radically improve the lives of up to 25 million people. Thus its goal is to increase their employment opportunities and make them able to participate more effectively in economic and social activities which will contribute to Bangladesh's long-term development.

Professional development training for English teachers with resources and classroom materials are provided by English in Action program, so that teachers can develop their own teaching skills and bring new ideas into the classroom. Experts from Open University UK have contributed in modification of materials in accordance to the local culture. Obviously the modifications made also match to the Bangladeshi curriculum. Teachers are assisted with proper technological support (such as iPods, audio speakers) so that the students can learn English in combination with their textbook. With the help of audio and video resources, EIA is initiating various teaching learning techniques in the English language classroom to implement

the communicative approach. This paper aims to investigate those teaching techniques, specifically, at the secondary level of English classes and will also explore the opinion of the students as to how EIA is impacting on their learning English.

Objectives

The specific objectives of the study were to:

1. Identify the EIA teaching learning techniques in the English language classrooms.
2. Explore students' responses toward EIA practices.

Methodology

Area of the study

The researcher selected Kapasia Upazila of Gazipur district in Bangladesh as a representative area where EIA interventions were being practiced in some schools.

Population, sample size and sampling technique

Five out of ten EIA secondary schools were chosen randomly. The teachers and students of class six; seven and eight in were selected as the total population for this study. The desired sample size was 205. Among these 205 respondents, 200 students and five English teachers were selected randomly as the sample for this research.

Research tools

Four types of research tools used for collecting data were:

1. **Semi-structured interview of teachers:**

A semi-structured interview schedule for the teachers was used mainly to reveal the teaching techniques in the English class.

2. **Group interview of students:**

A semi-structured interview schedule for the students was used mainly to disclose their response toward EIA intervention.

3. **Teachers' questionnaire:**

For triangulation of the data related to the English teaching learning process, researcher used a teacher's questionnaire.

4. **Students' questionnaire:**

For triangulation of the data related to the classroom teaching, researcher used a students' questionnaire.

Data analysis techniques

The researcher analyzed qualitative and quantitative data thematically. Holistic analysis was used for the open-ended questions and the close-ended questions were analyzed statistically. By these procedures and constructive analysis the most used techniques of teaching was discovered and the response of learners was clarified.

Findings and Discussion

By analyzing the data it is found that some activities are done by the teachers to implement the communicative approach. The activities are described below:

The most important things about classroom practice

Through interviewing the secondary school teachers it is found that the most important things about their classroom practice that help their students learn English are speaking practice through dialogue, drilling, group work, pair work, role play, brain storming, vocabulary practice, grammar practice, question-answering, choral dialogue practicing, vocabulary game and audio recording listening from the iPods.

Speaking practice through dialogue

One of the major language skills is the speaking skill. The EIA project focus on developing students' speaking skill and the teachers are aware of this as they get training from EIA. So, the EIA teachers involve students in speaking practice through dialogue in the English class.

> The most important things about my classroom practice that I try to do speaking practice among students through dialogue. (Teacher interview, Kapasia Horimonjuri Pilot Girl's High School, 2010)

Repeating word practice

Teacher involves students in repeating word practice because difficult words become easier to pronounce to the students when the teachers do this practice in the English class.

Group work and pair work

The teachers involve the students in group work and pair work in the English class to communicate with each other in English and to make them active in the English classroom.

> I try to involve my students in group work and pair work. (Teacher interview, Bhawal Chandpur High School, Kapasia, 2010).

Role play

Role play is an activity which is used to play a role in English in front of all students so that all can listen to their speaking in English. The teacher involves their students in role playing to remove their hesitancy in using English.

Brain storming

Brain storming develops students' creativity as well as writing skills. So, the teacher involves students in writing through brain storming in the English class.

> Role play and brain storming of students are also important activities in my class (Teacher interview, Kapasia Horimonjuri Pilot Girl's High School, 2010)

Grammar practice

One teacher involves his students in grammar practices explicitly as he thinks it is an important activity of his English class.

> The most important things about my classroom practice that I try to use vocabulary practice, grammar practice, question answer method, fill in the blanks and matching practices. (Teacher interview, Kapasia Pilot High School, 2010)

Question-answer

The teachers use question-answer as a method of checking students' understanding. The teacher asks the students about the lesson while the recording is going on using iPod or the teacher is describing any text.

Choral dialogue practicing

Choral dialogue helps students to remove introversion in speaking in English. Both weak students and good students respond to this activity. So, the teacher finds it as an important activity in the English class.

> I use choral dialogue in the English class. Because most of the time the weak students remain silent in the class. But when I use this technique they do not hesitate to participate in chorus. So, all students try to do that (Teacher interview, Kohinoor Girls' High School, Kapasia, 2010).

Vocabulary game

To increase the students' vocabulary stock, the teachers involves the students in vocabulary practices through games. It enables the students to know more new words in English.

> I try to use choral dialogue to make all the students active and I try to conduct vocabulary game to teach them new words (Teacher interview, Kohinoor Boys' High School, Kapasia, 2010).

Audio recording listening

Audio recording helps to increase students' listening skill. Only one teacher out of five says that he plays the audio recordings in the class and thinks it is one of the most important activities in the English class.

> I play audio recording for listening with the lessons (Teacher interview, Bhawal Chandpur High School, Kapasia, 2010).

Changes in teachers' teaching style

Now the EIA teachers have changed the way of thinking about teaching as a result of taking part in EIA. They explained it by giving some examples.

CLT instead of GTM

Before participating in EIA program, three out of five teachers thought Grammar Translation Method (GTM) is the only way to teach English. But now they use participatory approach in the class as because they get a good response from the students. So, it can be said that the teachers are trying to use Communicative Language Teaching (CLT) in the classroom.

> I thought Grammar-Translation method (GTM) is the only way to teach English before taking part in EIA. But now I use participatory approach in the class to teach English (Teacher interview, Kapasia Pilot High School, 2010).

Changes in using English and textbook

One teacher said that after attending in the training of EIA and cluster meeting his English speaking style has changed and he speaks in English regularly. Another teacher exchanges greetings in English. Another teacher said that she did not know that the stories are in the last part of the text book before joining in EIA. It is a very important issue that a teacher can use the textbook properly after attending in EIA.

> I did not know that the stories are in the last part of the text book before joining in EIA (Teacher interview, Kohinoor Girls' High School, Kapasia, 2010).

Changes in teacher's role

One teacher said that at present he plays a role of facilitator more than that of teacher. Now he is friendly in giving encouragement to the students for using English regularly.

> I always keep smiling face. I give them encouragement for using English regularly (Teacher interview, Kohinoor Boys' High School, Kapasia, 2010).

Students' Responses towards English learning and classroom activities

Students' perception about learning English

EIA activities are increasing students' motivation and interest in learning English because all students like learning English. Some students like for the enjoyable activities in the classroom and some like it for its usefulness. Students like the communicative activities like, role play, word game, story reading with poster watching, listening to dialogues, listening to songs and poems, grammar and composition practice. But some students prefer Bangla for better understanding with the English language in the English class. On the other hand, some students do not like to memorize grammar rules and essays.

> Yes, we all like learning English because of its usefulness. Teachers' instruction giving in English, dialogue listening, homework and word game are preferred by us. So, for doing these activities we like learning English (Student interview, Kohinoor Boys' High School, Kapasia, 2010).

Students' mostly preferred things in the English class

Students were asked about their preferred things in the English class. All of them talked about their preferred activities. These are: creative writing by brain storming, practicing dialogue in pair, role playing, explaining posters, answering question while reading, listening to songs, poems, news and cartoons, choral dialogue and repeating word practice.

> S1: I like creative writing like, writing paragraph by brain storming in the English class.
>
> S2: I like practicing dialogue with my friends.
>
> S3: I like to explain the picture of the poster in English.
>
> S4: I like answering questions from passage.
>
> S5: I like listening to January February song, poems and cartoons in the iPod.

S6: I like the news reading in the recordings and playing a role in English.

(Student interview, Kapasia Horimonjuri Pilot Girl's High School, 2010).

So, these activities are increasing the student talk time (STT) in the English class and it is also helping in their pronunciation development.

Students' disliking and problems

The students were asked about the things they dislike. They talked about those things as well as about their problems.

Memorizing

Students dislike memorizing anything for the exam without understanding. They feel bad when they are unable to know the meaning of the difficult words.

> When we have to memorize paragraph, essay, letter and application we feel terrible (Student interview, Kohinoor Boys' High School, Kapasia, 2010).

Noise

Noise of the class and the surroundings and side talking of the students hamper their listening practice.

> The noise of boat in the river or other sounds hinder to pay attention while listening to the audio recordings. Then everything becomes boring and noisy (Student interview, Kohinoor Boys' High School, Kapasia, 2010).

Students' responses towards the usefulness of learning English

The students described the usefulness of learning English and identified the following reasons:

- English is a prerequisite for traveling abroad

- Books of higher education at universities are available in English

- Knowing English is a qualification for getting better jobs and thus developing the economic condition of the country

- In a country like Bangladesh learning English is a prestigious issue

- English is also necessary for communication and access to information like, in the internet, database etc.

- Learning English is also essential for becoming an English teacher. By becoming an English teacher it would be possible to:
  - Decrease the shortage of English teacher in Bangladesh
  - Create self-development and help others

- o Transfer EIA methods to the next generation
- o Increase the English literacy rate in Bangladesh.

Conclusion

The study shows that the activities introduced in the secondary English classroom by EIA to implement the communicative approach successfully, are very popular with the students and these English language teaching techniques attempt to expedite students' English language learning as the students have started using English in the classroom. Again, the EIA program has elevated the two dimensional (reading and writing) English language skills of Bangladeshi students to four dimension (reading, writing, listening and speaking). So, it can be said that the English in Action program has made a great contribution in the era of English language teaching methods in Bangladesh and the government of Bangladesh should pay attention to instigate such types of programs to help implement Communicative Language Teaching in Bangladesh.

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Intensive English Program Effects on Phonological/Semantic Word Recognition

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Abstract
This study tests the effects of an intensive (14 week) EAP program on students' English language processing abilities. Using a lexical decision task in a pre/post test design, students' susceptibility to L2 semantic and phonetic word priming was probed. The results will demonstrate that, despite the relatively short length of exposure, the students' nevertheless realized a significant increase in susceptibility to phonological and semantic facilitation and interference. This is not a mere case of "learning new words" (as, indeed, the participants likely knew most of the vocabulary in the test well before entering the program), but instead demonstrates that students are strengthening neural connections to L2 vocabulary, and increasing in knowledge and ability to decode the English phonetic system. This study ultimately validates the usefulness of such programs for preparing students in English-medium course content.

Keywords: Word Priming, Semantic, Phonetic, TOEFL, EAP, Japan

Introduction

In East Asia, the past two decades have been marked by sustained government and private efforts to develop an educational infrastructure which will produce high English proficiency citizenry. The government of Thailand embraced the Communicative Approach as official government policy in an educational reform bill in 2003 (Jarvis, & Atsilarat, 2004). Governments in Korea and China have made similar moves towards constructing policy to enshrine communicative competency as the focus of public school foreign language programs (Jarvis, & Atsilarat, 2004). National and international examinations testing foreign language proficiency (such as TOEIC or TOEFL) are frequently required for university admission, or as part of the application procedure for plum employment (Reed, 2002).

A telling sign of this drive for the development of an English-proficient work force has been the sudden explosion of public and private English-medium tertiary schools and programs in the region. While some institutions, such as Japan's International Christian University, have long histories of providing English-medium university-level education in non-English-L1 settings, recent years have seen a proliferation in founding of "international" universities, for example Akita International University (Japan) and University of Nottingham Ningbo (China) were both founded in 2004, Tan Tao University (Vietnam) opened its doors last year, and Xing Wei College (China) is scheduled to open in 2012. Additionally, myriad universities around the region offer degree programs or feature departments with coursework taught entirely in English – e.g., Waseda University (Japan), Ho Chi Minh International University (Vietnam), and Asian Pacific International University (Thailand). These institutions often pride themselves on the caliber of graduates' English proficiency and international awareness.

In order to assist host-country nationals to successfully complete English-medium coursework, a common feature of such schools and programs is an English-language foundations development program designed to improve students' English language skills sufficiently to allow them to actively pursue content coursework taught in the language. Such foundation programs vary in length (usually from 1 semester to two years – often the time requirement is variable according to incoming students' proficiency levels), but all invariably have a four skills focus, and all can generally be categorized as intensive English for Academic Purposes (EAP) curriculum. The open question, however, is whether these programs are making short-term or long-term changes to students' English proficiency. Is this a surface-level change or is the inner brain circuitry being fundamentally altered? Are we forging new neural connections through short-term, intensive EAP coursework or are we going through the motions to perform for tests with no deeper level effects on students' other abilities?

Word Access in Reading

Coltheart (1978) originated the current view that the task of reading consists of at least two universal processes of lexical access: recognition via the semantic representation of the word, and via a non-lexical procedure of grapheme-phoneme conversion. This theory is known formally as the *dual route model* or 'standard' model (Patterson & Morton, 1985).

The model follows Forster's *Search Model* (1976) in envisioning two co-existing, parallel lexical access pathways which conduct simultaneous searches of the lexicon when presented with visual stimulus (i.e., a written word). The non-lexical route to word recognition would be immediately recognizable to any adherent of phonics curriculum, as it supposes a literal grapheme to phoneme conversion, and the word search is conducted via matching the word with phonological data stored in the lexicon. The lexical route, on the other hand, searches for whole words from the mental lexicon. As the route assumes word knowledge without phonological access, it is characterized as a direct means of semantic access. In alphabetically-transcribed languages, the semantic route is theorized to recognize words based upon *shape* (Coltheart et al., 2001), thus explaining why manipulations such as alternating case (e.g., "tHiS sEeMs VeRy StRaNgE, dOeSn'T iT?) have been shown to delay comprehension (Akamatsu, 2005). There is substantial evidence for both routes to lexical access.

Evidence from studies on reading disabilities help to shed light on how normally functioning brains have (at least) two different means of accessing written words. Amongst dyslexics, there are three commonly identified major subtypes: surface dyslexia, phonological dyslexia, and deep dyslexia (e.g., Coltheart, 1978; Marshall & Newcombe, 1973). Surface dyslexics manifest their condition in over-regularization errors. They have difficulty in reading irregular words, but display normal ability in reading regular words and nonwords (i.e., they will pronounce "pint" as rhyming with "mint"). By contrast, phonological dyslexics will have no trouble reading regular and irregular words, but have considerable trouble reading nonwords. Deep dyslexia is characterized by semantic substitution errors (e.g., reading "road" for "street"), and they also have trouble reading nonwords (Shu, Meng, Chen, Luan, & Cao, 2005). The fact that unimpaired readers can easily provide pronunciations to pseudo-words suggests that there is a means of lexical access which is independent of word meaning, which in the case of phonological dyslexics, is impaired. Likewise, the substitution errors of deep dyslexics suggest that, in the case of severe phonological route impairment, semantic information is still being transmitted.

Priming Studies

There is a long history supporting masked priming as a means of measuring word recognition proficiency, and particularly for studying the relative efficiency and accuracy of semantic and phonological processing schemes. Neely (1977) found

semantic priming facilitation effects with prime visibilities to 250ms. Technological improvements since have allowed researchers to play with the time window of time visibility, and indeed have found that even so-called "unconscious" primes (i.e., primes displayed for such a brief period that the reader is often unaware of having seen anything) can produce facilitation effects. Perea and Rosa (2002), for instance, found semantic priming effects (but also found that the effect was relative to the degree of association) at 66ms of prime visibility, and Bodner and Masson (2003) found effects with prime visibility of a mere 43ms.

The area of phonological priming likewise has a large body of supporting research. Humphreys, Evett, and Taylor (1982) found strong facilitation effects for homophonic primes. Ferrand and Grainger (1992, 1993), varying prime onset visibility from 17ms to 100ms, found that phonological prime facilitation consistently emerged around 45-50ms and above. While types of priming – e.g., word vs. nonword – and display time variables have been hotly debated, the vast number of studies have led many, such as Lukatela et al. (1993) and Van Orden et al. (1987), to conclude that there is undeniable evidence for phonologically mediated access to the lexicon.

The Current Study

The study described herein was undertaken at Akita International University, an English-medium 4-year university in northern Japan, in an effort to ascertain the impact the intensive English foundations program was having on students' L2 English lexical mapping and retrieval abilities. Before going into the details of the study, however, as the data was collected at a single institution, to prevent overly-broad interpretation of the results, it is incumbent upon the author to expound on the details of the foundations program at Akita International University (AIU).

The AIU intensive English program goes by the moniker of 'English for Academic Purposes' (EAP), which is the title of both the program and the department at that school. Passing the EAP program is a required first step for completion of any four-year degree program at AIU. All incoming, degree-seeking freshmen are required to spend at least one semester in EAP. EAP students are divided into one of three levels, according to TOEFL ITP scores. Roughly 80% of each entering freshman class tests into the highest level of EAP, which correlates roughly with a TOEFL ITP score of 500+. Each level of EAP requires one semester of study to complete, each with 18 hours per week of mandated curriculum (14hrs/wk. of four skills focus, plus computer, TOEFL prep, and language development center courses). The exit criteria

from the EAP program is to pass all coursework, to maintain a "C" overall grade point average, and to achieve a TOEFL ITP score of 500 or more. Only after meeting the exit criteria and passing through the highest level of EAP are students allowed to start general coursework, thus depending upon their entry level, students will generally spend between one and three semesters in EAP before moving on to general and major-specific courses.

As we can see, the AIU EAP program is ambitious in scope: taking incoming freshmen and attempting – often in the course of a single semester – to bring their English language skills up to a level whereby they can actively participate in and benefit from content coursework delivered in English. The interactive environment of any international, English-medium university must also be taken into account in any attempt to measure progress in English learning; however, the foundations programs tend to be the beating hearts of international universities, and are certainly both a point of pride and a point of advertising for these institutions. While many of the students at such international universities (and this is certainly the case at AIU) enter with far-above-average English skills compared to their compatriots, the implied claim of foundations programs are that they measuredly improve upon those English skills. Thus, it is completely fair to ask whether these programs are succeeding by "teaching to the test," through managed expectations, or if the intensive programs are actually creating new neural pathways to accessing English vocabulary.

Test #1 (pre-treatment assessment)

Subjects: Thirty incoming freshmen students at Akita International University were recruited for the study. The only requirement for participation in the study was to be a new entrant to the EAP program; the subjects were, nevertheless, a rather homogenous group. All subjects were Japanese L1, and subjects were evenly divided male/female. All subjects had normal or corrected to normal vision. As the pretest required testing to commence before the EAP coursework began, this necessarily entailed commencing before level testing as well. Thus, the participants did come from different levels within the EAP framework: 23 subjects were in level III (the highest), 5 from level II, and 2 from level I (the lowest level).

Materials: 150 test items were created in a masked priming paradigm lexical decision test using DMDX software (Forster & Forster, 2003). Half of the items were a battery of real English words culled from EAP level II materials, and the other half were non-

words made by corrupting other vocabulary items from the EAP II materials. All non-words were constructed in a manner to adhere to rules of English letter/phoneme collocation so as to avoid easy dismissal due to orthographic illegality (e.g., "pxam" would not have been permissible, but "suber" would be). Additionally, corresponding primes for each real-word target were chosen to correspond to the following categories: 1) Semantic prime: e.g., eyes / GLASSES; 2) Phonological prime: e.g., wood / SHOULD; and 3) Control: restore / LABEL. Primes were presented before non-words, as well.

Procedures: Subjects were tested individually in a test of English word knowledge and recognition. The testing paradigm employed a masked priming design with a 50ms prime visibility. Standard counterbalancing of test items was employed. Subjects were tested the first time over a two week period overlapping registration and the first week of classes.

Results

Reaction times for recognition of real vs. non-words was measured and analyzed to ascertain the effect of priming. The 1st test, undertaken before students had undergone the intensive EAP programming, yielded the effects on real word recognition described in Table 1.

Priming Type	Average Reaction time (measured in milliseconds)
Prime semantically related to target	767ms
Prime phonetically related to target	712ms
Control (no relation between prime and target)	733ms

Table 1. Reaction times for real word recognition in test #1 across prime types

As we can clearly see, semantic primes seem to actually be *delaying* word recognition (as compared to the control group) rather than facilitating it, whereas there does appear to be a small facilitation effect for phonetically related primes. The delaying effect was statistically significant, $F1=21.15, P<0.01$, and the facilitation effect of the phonetically related primes is approaching significance, $F1=3.80, P<0.06$.

As mentioned above in the *Subjects* section, the drive to recruit and test subjects prior to their beginning the EAP program had necessarily caused testing to commence prior to the students being differentiated by level, so one would immediately wonder whether the delay from the semantic priming was just an effect of the weaker students warping the statistics. Analyzing the EAP III students separately from level II and I students demonstrated that, while they were significantly faster than their lower-level peers, the group results were still fairly representative (see Table 2). Both groups are still delayed in recognizing words preceded by a semantically related prime vs. the non-related control, and both groups were facilitated by phonologically related primes. For the EAP III group, the delay effect was still significant, $F1=23.29$, $P<0.01$ (but not for the lower level group, $F1=5.21$, $P>0.08$), but the phonetic priming facilitation was no longer significant, $F1=1.09$, $P>0.30$ (nor for the combined levels I and II: $F1=4.0$, $P>0.11$).

Level III Results	Levels I & II Results
Semantically Related Prime: 747 ms	Semantically Related Prime: 861 ms
Phonetically Related Prime: 707 ms	Phonetically Related Prime: 734 ms
Control : 718 ms	Control : 794 ms

Table 2. Reaction times divided by skill level and prime type

These results seem to indicate that, upon entry to the EAP program, students' semantic pathways to word recognition were sufficiently weak as to actually *impede* word recognition, whereas their phonological pathways to recognition, while not incredibly robust, still seem to be active. This is not to say that students have no semantic pathways to recognition – indeed, if such were the case, the semantically related primes would not differ significantly from the control group (i.e., the students would have treated all non-phonologically related primes as so much "noise"), but rather, those pathways are still so underdeveloped as to proceed significantly more slowly than the reading via the nonlexical (i.e., phonological) path, which can be assumed at this point to be the students' primary means of word recognition.

Discussion of Test #1

The results are rather startling considering that the test subjects were comprised of students whom one would consider to be amongst the top level of Japanese English learners. As English ability comprises one of the key factors to admission at AIU, the

dramatic slow-down occurring when students attempt word recognition via semantic processing seems to indicate that this processing scheme may be a very late-in-development skill, at least amongst L2 learners. The fact that phonological priming was accompanied by comparably robust facilitation effects is not altogether surprising, given the fact that alphabetic languages are predisposed to this kind of processing. The key question, however, is whether intensive English coursework can improve these processing schemes.

Test #2 (post-treatment assessment)

Subjects: The same subjects as above in Test #1 were called back to take part in the second testing session, but only 24 of the original test group responded to the call. The other six had either left AIU during the course of the semester, or declined further participation in the study. Of the 24 remaining participants, 18 were EAP III, 5 were EAP II, and one was EAP I.

Materials: The same materials as in Test #1 were used, but twenty percent of primes and targets were changed in the control category in order to help minimize any memory facilitation. DMDX auto randomization of presentation was utilized on both tests so repetition of order of presentation was not a factor.

Procedures: The second test followed the same design and procedure, and was administered during the final 10 days of the 14 week semester (note: due to a delayed start of the academic year after the Great East Japan Earthquake, the semester was shortened to 14 weeks from the usual 16; however, the same number of instructional hours were delivered).

Results

The group, as a whole, performed much faster than previously, but there was still a slight delay for recognition of the semantically primed targets (see Table 3).

Priming Type	Average Reaction time (measured in milliseconds)
Prime semantically related to target	695ms
Prime phonetically related to target	661ms
Control (no relation between prime and target)	685ms

Table 3. Reaction times for real word recognition in test #2 across prime types

This delay was not statistically significant ($F1=1.47$, $P>0.24$), however, and the gap seems to be closing. Phonological priming, on the other hand, finally reached a statistically significant level of facilitation, $F1=4.66$, $P<0.04$.

Separating the results of the EAP III students and the lower level I & II students yielded a much more nuanced picture, however. As shown in Table 4, when separated from the others, it is revealed that the EAP III students average reaction time for targets preceded by semantically related primes was 5ms less than the control time. While this was still statistically insignificant ($F1=0.24$, $P>0.63$), this nevertheless points to great strides in semantic processing speed. Furthermore, all reaction improved measurably compared with the first test. The students in the EAP I & II levels (see Table 5), have likewise improved their all-around reaction speeds, but are still showing considerable difficulty utilizing a semantic path to word recognition; however, the delay in reaction timing vs. the control condition is no longer significant ($F1=3.35$, $P>0.12$).

Priming Type	Average Reaction time (measured in milliseconds)
Prime semantically related to target	679ms
Prime phonetically related to target	657ms
Control (no relation between prime and target)	684ms

Table 4. EAP III students' reaction times in test #2

Priming Type	Average Reaction time (measured in milliseconds)
Prime semantically related to target	715ms
Prime phonetically related to target	670ms
Control (no relation between prime and target)	690ms

Table 5. EAP I and II students' reaction times in test #2

Analysis of the total group changes shows a statistically significant increase in priming facilitation, across the board and in the direction of improvement: $F1=8.03$, $P<0.01$; $F2=92.31$, $P<0.01$. In other words, there were marked improvements in students' reaction times, as well as in their susceptibility to both semantic and phonetic priming. While the lower level EAP students are still not showing outright

facilitation effects for semantic priming, they are nevertheless moving in that direction.

Discussion of Test #2

The degree of improvement, in both all-around processing speed, and in individual lexical and non-lexical pathway use is encouraging, as it indicates that the effect of 14 weeks of intensive English focus *is* actually impacting the speed and effectiveness of the semantic and phonological pathways, as evinced by priming susceptibility. The fact that semantic priming has not yet attained a statistically significant level of facilitation, even with the top level students, does indicate that a single semester is not enough, however. While this test offers a snapshot of learning at a point in time, and indicates that significant improvement in both pathways of word recognition is occurring, the point at which both pathways become sufficiently robust to yield consistently significant priming facilitation is, as of yet, unknown.

General Discussion

The process of language learning is sufficiently fluid, with enough individual differences, to preclude overgeneralization of the results. While it is beyond the scope of this experiment to validate every foundations/EAP program, the study does seem to indicate that the program evaluated was succeeding in prompting reorganization and strengthening of neural networks for lexical access. Within the confines of a 14 week period of study, the semantic pathways, while still under development, improved to the point of no longer *delaying* word recognition, and the top level learners reached a point wherein targets proceeded by semantically related primes were processed faster than the control group (albeit not to a statistically significant degree). Phonological processing schemes became much faster and more functional during this period, and there were large increases in both priming susceptibility and word recognition speed. Post hoc analysis interestingly noted no significant correlation between student TOEFL scores and their susceptibility to priming in either test, which suggests that the robustness of lexical and non-lexical processing schemes are a phenomenon separate from general English proficiency or vocabulary size. The pure amount of text that students were required to read during the course of the semester undoubtedly had an impact on their word processing abilities and strategies. Thus the EAP program does seem to have an effect on lexical pathway formation; however, as we see especially in the case of the development of the semantic pathway, at the conclusion

of the EAP program, the students still have a long way to go in their English development.

Such foundational programs may bring students to or past the minimum level of processing efficiency required to undertake content coursework taught in the target language; however, language development is likely to continue apace throughout the duration of students' time at the English-medium institution. A logical next step in this branch of research is to track these students throughout their studies in order to ascertain whether they ever attain native-like or near native-like processing abilities in terms of priming susceptibility. It would also be interesting to compare students from different grade levels to measure whether or not neural pathway development continues apace, or drops off in rate after finishing the foundations program and the resultant shift away from exclusive focus on English development in students' academic endeavors.

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40 years of Language Studies:
A Bibliometric Study of Research Articles in Taiwan

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Abstract

Recent technological advantage and widespread accessibility to the internet have greatly changed how educators and researchers conduct their studies. In addition, the availability of the Institute for Scientific Information (ISI) Web of Knowledge website has further abridged researchers' access to published articles of interest. In Taiwan, a rise in emphasis on publications indexed in the ISI Web of Science citation database was clearly observed. However, practical applications of such information have not yet been fully explored. In response, this paper details a bibliometric analysis of the 40 years of language and linguistics research in Taiwan. Bibliometric information was downloaded from the ISI Web of Science citation database. A total of 335 articles whose ISI Web of Science categorized under the subject language and linguistics, and has a registered institution coming from Taiwan are downloaded and analyzed. Findings suggest that knowledge production is governed to a rising scale through practices based on market-like operations. Furthermore, newer articles tend to have a statistically significant higher numbers of author provided keywords and ISI Web of Science provided keywords, and a higher number of references. However, older articles still exhibit a statistically significant higher citation rating. Journal and keyword analysis is also provided to further depict the publication landscape in the field of language and linguistics in Taiwan.

Keywords: Keyword analysis, research trends, concordance, EFL, ESL

Introduction

In higher education today, the definition of scholarship is highly correlated to academic publications (Boyer, 1990; Dirks, 1998). University rankings, institutional funding, and prestige in a certain field of study are all interconnected with the frequency of scholarly publications and their subsequent citations by later articles (Anderson, Ronning, Vries, & Martinson, 2007; Keith, 1999). Furthermore, as technological advancement changes the way we conduct our daily lives, the widespread accessibility and interconnectivity brought forth by the availability of the internet has also started the evolution of academic research related technology (Chambers, 2004). Technology in terms of databases such as the Thomson Reuters' ISI Web of Science (WOS), Scopus, and many other bibliographic websites have further abridged researchers' access to published articles of interest (Braam, Moed, & Vanraan, 1991; Thelwall, Vaughan, Cothey, Li, & Smith, 2003).

With the increased availability of bibliographic database, researchers are having questions regarding the actual practical usage of such tools. Many researchers mentioned that by analyzing bibliometric information, studies can be made with regards to the mapping of specific research trends (Braam et al., 1991; Eom, 1996; Glenisson, Glanzel, Janssens, & De Moor, 2005; Ingwersen & Christensen, 1997; Janssens, Leta, Glanzel, & De Moor, 2006), evaluate and compare a country's research performance (Clarke et al., 2007; Fernandez, Gomez, & Sebastian, 1998; Thelwall, Tang, & Price, 2003; Ugolini & Mela, 2003), comparison of university research performance (Bjorneborn & Ingwersen, 2004; Narin, Olivastro, & Stevens, 1994; Thelwall & Harries, 2003), journal performance, and many other related evaluative functions.

In Taiwan, a rise in emphasis on publications indexed in the Thomson Reuters' ISI citation database was clearly observed (Chen & Chien, 2009; Chu, 2009; A. H. M. Huang, 2009; Kao & Pao, 2009; Thelwall, Vaughan et al., 2003). The concept of *publish or perish*, which signals the importance of publishing research results, has also affected Taiwan's academe. In effect, educators are pressured to publish in peer-reviewed journals, preferably those included in the ISI citation indexes, such as the Science Citation Index (SCI), Social Science Citation Index (SSCI), or the Arts and Humanities Citation Index (A&HCI). It has been noted that the number of publications indexed in the ISI citation database are quite important, since these numbers are used as basis for research grant approvals (Kao & Pao, 2009), university rankings (M. H. Huang, Chang, & Chen, 2006), and even tenureship or promotion of

faculty (Tien, 2007).

In response, this paper details a publication analysis of the 40 years (1970-2010) of language and linguistics research in Taiwan using bibliometric information downloaded from the ISI WOS SSCI and A&HCI database. A total of 335 articles wherein ISI WOS categorized under the subject areas language and linguistics, and has a registered institution coming from Taiwan are downloaded and analyzed. Data includes authors and their affiliations, year published, title, abstract, keywords, source journal, funding information, number of references, and times cited. Besides the correlation analyses of the different variables downloaded, journals and keywords analysis is also provided to further depict the publication landscape in the field of language and linguistics in Taiwan.

Globalization and changing publication norms in higher education

Recently globalization has caused strong impact in the higher education academe. Changes in academic communities in developed countries such as the United States (including Canada), United Kingdom (UK), Australia, New Zealand, and several Asian societies are the most evident (Mok, 2003, 2007; Ntshoe, 2004). Friedman (2005) mentioned that globalization started from the fall of the Berlin wall and the launch of the world wide web in 1989. Many scholars have talked about the impact of globalization on economic, social, political, and cultural fronts, for over the past decade or so (Giddens, 1990, 1999; Robertson, 1995; Sklair, 1995). According to Currie (1998), even though globalization is termed differently in different contexts (such as *McDonaldization*, *Toyotism*, and *post-Fordism* or *neo-Fordism*) and each takes a slightly different form, they all emphasize economic efficiency, and there is a tendency towards homogenizing practices. More than ever before, the higher education sector is expected to respond to the increasingly globalized knowledge-intensive world of the twenty-first century (CHE Report, 2000).

According to the data released by OECD (2006), European countries have started to devote large percentage of their educational expenditures for research. However, with the increasingly limited number of resource available and knowing the fact that making a world class university is quite expensive, governments have to make the very best decision on which are the *better* research projects to invest in. Likewise, countries in East Asia driven by the intention of enhancing their global competitiveness have started to take serious steps. Since the 1990s, Hong Kong higher education has gone through several Research Assessment Exercises (RAEs) patterned

from the UK approach to monitor research performance (Mok & Chan, 2001). Universities in Hong Kong have gone through major review exercises, identifying their major strengths and developing their centre of excellence (Deem, Mok, & Lucas, 2008). With the adaptation of *publish or perish* context, Hong Kong's academe are becoming more instrumental when choosing publication venues (Mok, 2005). Publications in the SSCI and SCI indexed journals are major targets of Hong Kong's academe, which is of great concern of the university administrators (Chan, 2007).

In Taiwan, the government has realized that globalization has accelerated competition among higher education institutions internationally (Deem et al., 2008). A series of large scale projects were launched, in order to catch up with the world in terms of higher education amid the powerful trend of globalization (Song & Tai, 2007). Two main focused are internationalization, and the quest for world-class universities. These demands have become even more critical, requiring higher education to respond in an intentional and comprehensive way. Liu (2007) noted that the Taiwan's Higher Education Evaluation and Accreditation Council (HEEACT) was created in 2002 with the single purpose of conducting university evaluations. Through administering evaluations, the HEEACT aims to create an impact on Taiwan's universities and their teaching, and continues to raise standards in the entire higher education system (Liu, 2007). The current increased interest in higher education performance assessments goes beyond higher education institutions (HEIs), Ministry of Education (MOE), and the nation itself. Similarly, the focus on performance indicators is not only a response to local or particular conditions, but also represents a general issue which spans a diversity of levels and areas.

Globalization has meant an increased demand from students, employers, and academics for indicators of the international standing of universities (Williams & Dyke, 2004). According to the widely cited ranking published by *Shanghai Jiao Tong University* (SJTU), indicators used for research quality evaluation wherein articles published in Nature and Science and Articles in SCI-expanded, SSCI each has a weight of 20% (ARWU, 2007). In other words, when it comes to what makes the best research; people tend to relate it with studies indexed on Nature and Science, SCI and SSCI, which are products of Thomson Reuters. Similarly, in the *Asia's Best Universities* published by *Asia Week*, one important indicator for research performance is *citations in academic journals* as tracked by the *Journal Citation Index* (Asia Week, n.d.). The citation data which come from *Thomson Reuter's Essential Science Indicators* were also used in the world university ranking system

conducted by *Times Higher Education Supplement.*

FSU (2007) noted that citation indexes are bibliographic indexes which allows the user to trace research from an article, by searching for subsequent articles that have cited that original article. These database are mostly used in bibliometrics; a type of research method used in library and information science. Researchers mostly use bibliometric methods to evaluate and determine the influence of a single writer, or the relationship between two or more writers from works within a given field or body of literature. The SCI, the SSCI, and the A&HCI are some of the most commonly used bibliometric tools for researchers (Palmquist, 2001). While most authors and researchers think that citation indexes are mere tools as means of recovering information, in fact there are actually numerous important, productive and unique uses of such indexes (Eugene Garfield, 1994). Besides that SSCI does produce valid estimates of research quality (Keen, Horan, Hanish, Copperstone, & Tribbensee, 1998), such indexes can also be used to rank and evaluate journals (Eugene Garfield, 1972).

Bauer & Bakkalbasi (2005), mentioned that the ISI citation indexes do indeed offers the most comprehensive coverage back in time, but for some subject areas specialized database may offer the best citation coverage, and for yet other areas *Google Scholar* may be an indispensable tool. However with the continued changes brought forth by advancement of information technology, in addition with the corresponding proliferation of resources that offers both citation indexing and tracking researchers; authors would indeed have more and more tools to aid their academic endeavors. In essence, with the help of technological advancement in bibliometric studies, understanding the different fields of actions, genres, discourses, and texts, shall not only provide a clearer picture of the historical trends in Science and Technology publications, but results shall also aid future scholarly publications regarding the current directions of the field.

Method

In order to have a clear picture of the 40 years of language and linguistics research in Taiwan, bibliometric information was downloaded from the ISI WOS SSCI and A&HCI database. The ISI WOS was selected as the source of information, for the reason that it is the most frequent used database with regards to bibliometric studies (Moed, 2009). In addition, the ISI WOS covers around 10,000 of the highest impact journals worldwide, but this number is expected to increase as new journals are

included each year. Although, ISI WOS does not claim to have complete journal coverage, however, declare that it includes the most relevant ones in the discipline (E. Garfield, 1998a, 2004). Garfield (1964, 1972, 1979, 1998b) developed a powerful and unique criterion for expanding the database beyond the core journals, together with an internal coverage monitoring system and careful cover to cover scrutiny of journals, the ISI WOS is deemed as the most appropriate tool for bibliometric analysis.

To download the needed bibliometric information from the ISI WOS, a search for all articles with a registered institution coming from Taiwan was first initiated. This is then followed by the selection of the categories *Linguistics* and *Language and linguistics* under the different subject areas selection. A total of 335 articles were selected and information such as authors and their affiliations, year published, title, abstract, keywords, source journal, funding information, number of references, and times cited were downloaded. The current study only included published journal articles, wherein papers are peer reviewed. Peer review is a well-accepted indicator of quality scholarship (Ramsden, 1994). It is the process by which an author's peers review a paper submitted for publication. A number of recognized researchers in the field will evaluate a manuscript and recommend its acceptance, revision, or rejection. Articles accepted for publication through a peer review process implicitly meet the discipline's expected standards of expertise (University of Nevada, 2008).

After downloading the data, the software Statistics Package for Social Scientist (SPSS) was used to interpret the implications of the different quantitative data, such as: author count, number of collaborating countries, year published, reference numbers, number of keywords, number of publisher provided keywords, and times cited. While the software Concordance was used to analyzed the title, abstract, and keywords. Concordance is a type of text analysis and concordance software. Mostly Concordance is used in language learning studies, wherein word frequencies and collocations are involved (Altenberg & Granger, 2001; Cobb, 1997). In this study, the concordance software was used to create a list of frequently used keywords. This in turn was analyzed with respect to the different publishing years, which resulted in depicting the publication landscape of the 40 years of language and linguistics research in Taiwan.

Results and Discussions

After the data from the ISI WOS database were downloaded, analysis was first made with regards to their year coverage. This was then followed by the correlation analysis

of the articles' age with authors and country counts, number of references, citations, authors' supplied keywords, and publisher supplied keywords. Such analysis is intended to better understand how bibliographic information is affected by the passing of time (changing decades).

Table 1 shows the number of articles separated by decades. This table illustrates that during the years 1970-1979 only 5 articles were included in the ISI WOS database. For the following decades, although it seems that there was a dramatic increased from 5 to 24 and then 51 articles; the overall contributions remained quite low. However, an increased was seen on the last decade (2000-2009) with a total of 255 articles published. Updated information currently shows that ISI WOS data has a total of 422 articles (as of March 1, 2012). This is an increased of 87 articles for just two years (2010 and 2011). Furthermore, comparison on the number of source journals for the past decades between current ISI WOS database have shown an increased from 80 to 82 journals. Although such result does not mean the addition of 2 journals, since ISI periodically assessed the journals eligibility in the SSCI and A&HCI inclusion. However it is noted as journals get accredited into the ISI WOS database, Taiwanese scholars kept a close eye on which journals to publish. Such phenomena can also mean that scholars value the notion of submitting to academic journals that are indexed in the ISI WOS database (please see Table 4 for the journal list).

Years	n	%
1970 – 1979	5	1.00
1980 – 1989	24	7.00
1990 – 1999	51	15.00
2000 – 2009	255	76.00

Table 1. Article production by decades (N = 335)

Table 2 shows the results of the correlation analyses. Results show that an article's age is significantly positively correlated with the number of times an article is cited. This result would seem logical since the older the article, the more chance of getting read. However, such case might not always be true, for newer published articles would contain a more recent (including emerging) concepts and theories. These two opposing ideas regarding publication citations are quite intriguing that would merit further empirical bibliometric studies. As for the other variables such as number of

references, number of authors, number of supplied keywords. Results show that the articles' age is significantly negatively correlated with the number of references, number of authors, and the number of supplied keywords. Such results have show that more recent papers would indeed have an increasing number of opportunities to collaborate with other scholars. Furthermore such collaboration is not only limited to local scholars, but also includes international contributors. It is well considered that having international contributors or collaborators would have a better chance of getting the global perspectives needed in order to get a paper published.

Results also show that for the number of keywords, the more the number of supplied keywords the better the paper shall be searched or indexed. It is said that authors should use keywords not already found in the article title or abstract. Since, search engines automatically crawled into such information. Hence, using additional unique keywords (and the reason why publishers provide additional keywords) shall further increase the chance of the article being search, read, and downloaded. With the publication industry becoming more dependent on the economic side of the business, knowledge production is currently seemed to be based on market-like operations.

Items	Mean	SD	Min.	Max.	r
Article's age (years)	7.23	7.34	0	39	
Authors count	2.05	5.38	1	95	-0.450
Collaborating countries count[a]	1.34	2.55	1	47	-0.470
Number of references	36.48	18.38	0	88	**-0.279****
Number of times cited	3.17	11.67	0	195	**0.250****
Number of author supplied keywords	2.35	2.69	0	11	**-0.453****
Number of publisher supplied keywords	2.57	3.33	0	10	**-0.265****

Table 2. Correlation of article's age to the different bibliometric information (N = 335)
Note: [a]Including Taiwan. *p < 0.05, **p < 0.01

Table 3 shows the other relevant bibliometric information of the 335 articles. Besides the previously mentioned findings, results show that there are a total of 21 discipline areas (please see Table 8 for additional information). More importantly 703 unique author supplied keywords and 479 unique publisher supplied keywords (please see Table 12 for additional information).

Items	Counts[a]
Journals	78
Publishers	48
Collaborating countries	23[b]
Discipline areas	21
Funding agencies	4
Corresponding author's institutions	90
Corresponding author's countries	11[b]
Author supplied keywords	703
Publisher supplied keywords	479

Table 3. Relevant bibliometric information (N = 335)
Note. [a]Number of unique entries. [b]Including Taiwan.

Table 4 shows the list of the top 20 ISI WOS indexed journals wherein the 335 articles are published. Results show that the 5 most frequently submitted journals are linguistic and language related publications. Furthermore, topics of interest are mostly related to the Mandarin Chinese language and English language learning. Such findings coincide with the results of both the title, abstract, and keyword analysis using the Concordance Software (please see Tables 12-14 for more information). Additional analysis also suggested that Taiwanese authors place strong emphasis on the learning of the four skills and computer assisted language learning.

Journals	n	%	IM[a]
JOURNAL OF CHINESE LINGUISTICS	34	10.10	0.043
LANGUAGE AND LINGUISTICS	33	9.90	0.800
JOURNAL OF EAST ASIAN LINGUISTICS	28	8.40	0.375
OCEANIC LINGUISTICS	12	3.60	N.A.[b]
BRAIN AND LANGUAGE	10	3.00	2.929
FOREIGN LANGUAGE ANNALS	10	3.00	0.260
JOURNAL OF PRAGMATICS	10	3.00	0.800
BULLETIN OF THE INSTITUTE OF HISTORY AND PHILOLOGY ACADEMIA SINICA	9	2.70	N.A.[b]
COMPUTERS & EDUCATION	8	2.40	2.190
LANGUAGE LEARNING & TECHNOLOGY	8	2.40	1.700
JOURNAL OF SECOND LANGUAGE WRITING	7	2.10	1.038
LANGUAGE AND COGNITIVE PROCESSES	7	2.10	1.603
LINGUA	7	2.10	0.532

TESOL QUARTERLY	7	2.10	0.972
APPLIED PSYCHOLINGUISTICS	6	1.80	2.130
ASIA PACIFIC EDUCATION REVIEW	6	1.80	0.077
COMPUTER ASSISTED LANGUAGE LEARNING	5	1.50	N.A.[b]
JOURNAL OF CHILD LANGUAGE	5	1.50	0.792
LINGUISTICS	5	1.50	0.476
METAPHOR AND SYMBOL	5	1.50	1.000

Table 4. All-time top 20 journals (N = 335)
Note. [a]2008 Impact factor. [b]Not applicable, no impact factor was found.

Table 5 shows the breakdown of the number of articles separated into four decades. Results show that during the first three decades Taiwanese scholars mostly submitted their work to the *Journal of Chinese Linguistics*; a journal of the Chinese Hong Kong University. The journal's major coverage is Chinese language research. Additional topics include variety of general linguistic areas such as phonetics, phonology; morphology, syntax, grammar; semantics, pragmatics; applied linguistics such as historical linguistics, comparative linguistics, computational linguistics, psycho-linguistics, sociolinguistics and more (please see the journal's website for more information, http://www.cuhk.edu.hk/journal/jcl/index.htm). Furthermore, it is only during the last decade that *Language and Linguistics*; a Taiwanese home grown journal sponsored by the *Academia Sinica*, was setup and later included in the ISI WOS database (for more details please see the journal's website; http://www.ling.sinica.edu.tw/index_en.asp.htm).

Journals	A[a]	B[b]	C[c]	D[d]	
JOURNAL OF CHINESE LINGUISTICS			13	10	11
LANGUAGE AND LINGUISTICS					33
JOURNAL OF EAST ASIAN LINGUISTICS				8	20
OCEANIC LINGUISTICS				1	11
BRAIN AND LANGUAGE			2	1	7
FOREIGN LANGUAGE ANNALS				2	8
JOURNAL OF PRAGMATICS					10
BULLETIN OF THE INSTITUTE OF HISTORY AND PHILOLOGY ACADEMIA SINICA				1	8
COMPUTERS & EDUCATION					8
LANGUAGE LEARNING & TECHNOLOGY					8
JOURNAL OF SECOND LANGUAGE WRITING					7
LANGUAGE AND COGNITIVE PROCESSES				1	6
LINGUA					7
TESOL QUARTERLY		1		1	5
APPLIED PSYCHOLINGUISTICS				2	4
ASIA PACIFIC EDUCATION REVIEW					6
COMPUTER ASSISTED LANGUAGE LEARNING					5
JOURNAL OF CHILD LANGUAGE				1	4
LINGUISTICS				3	2
METAPHOR AND SYMBOL					5

Table 5. Article contributions in top journals by decades (N = 335)
Note. [a]1970-1979. [b]1980-1989. [c]1990-1999. [d]2000-2009.

With regards to the number of contributing authors, Table 6 shows that around 61% of the articles are written by only one (1) author and with the remaining 39% of the articles written by two or more contributors. More importantly, around 36 articles are co-authored with scholars located in the United States, followed by China, England, Canada, Australia, and Japan. A result worth mentioning is that there are two papers with significantly large number of authors (26 and 95), which is of huge significance in the literature of Asian language learning.

Items	*n*	%
No collaboration	204	60.90
With collaboration	131	39.10
Local collaboration (Taiwan)	71	
International collaboration	60	
Top 6 collaborating countries[a]		
USA	36	
China	6	
England	5	
Canada	4	
Australia	3	
Japan	3	

Table 6. Article collaboration information (N = 335)
Note. Some articles might have more than one international collaborating author.

Author/s	*n*	%
1	204	60.90
2	65	19.40
3	40	11.90
4	12	3.60
5	9	2.70
6	2	0.60
7	1	0.30
26	1	0.30
95	1	0.30

Table 7. Number of collaborating authors (N = 335)

With regards to the area discipline or genre analysis, Table 8 shows that besides *Linguistics* and *Language & Linguistics* it is noted that educational research, learning psychology, Asian studies, and computer related studies, rank among the highest. Table 9 shows the funding information of the articles. Results suggest that almost 98% of the articles are not funded, while only around 2% are sponsored studies with the *Taiwan's National Science Council* (NSC) funding 7 of the papers. With the majority of the published paper are unfunded, there comes the question on assuming the papers indexed in the ISI WOS are of high quality, then why are the studies not

able to seek the support of funding agencies? Moreover, such results suggest that there is a need for the government to focus on the reasons scholars are unable to secure such funding, and or the need to re-visit the funding policies of NSC.

Discipline areas	n	%
Linguistics	262	37.48
Language & Linguistics	207	29.61
Education & Educational Research	63	9.01
Psychology, Experimental	44	6.29
Asian Studies	37	5.29
Computer Science, Interdisciplinary Applications	14	2.15
Neurosciences	12	1.72
History	9	1.29
Communication	6	0.86
Computer Science, Artificial Intelligence	6	0.86
Rehabilitation	6	0.86
Psychology	5	0.72
Psychology, Developmental	5	0.72
Psychology, Educational	5	0.57
Acoustics	3	0.43
Literary Reviews	3	0.43
Literature	3	0.43
Psychology, Multidisciplinary	3	0.43
Anthropology	2	0.29
Engineering, Electrical & Electronic	2	0.29
Operations Research & Management Science	2	0.29

Table 8. Article discipline areas (N = 699)
Note. Most articles have more than one discipline area.

Items	n	%
Articles without funding	328	97.90
Articles with funding	7	2.10
Articles with 1 funding agency	5	
Articles with 2 funding agencies	1	
Articles with 3 funding agencies	1	
Top funding agency		
National Science Council	7	

Table 9. Articles with funding and their funding agencies (N = 335)

Institutions	*n*	%
National Tsing Hua University	35	10.45
National Taiwan University	33	9.85
Academia Sinica	22	6.57
National Taiwan Normal University	21	6.27
National Chung Cheng University	21	6.27
National Chiao Tong University	21	6.27
National Chengchi University	20	5.97
National Cheng Kung University	11	3.28
National Chiayi University	5	1.49
National Sun Yat Sen University	5	1.49
National Chung Hsing University	4	1.19
Tamkang University	4	1.19
University of Wisconsin, USA	4	1.19
Chung Hua University	3	0.90
Fu Jen Catholic University	3	0.90
Ming Hsin University of Science and Technology	3	0.90
National Dong Hwa University	3	0.90
National Kaohsiung First University of Science and Technology	3	0.90
National Taipei Teachers College	3	0.90
National Yang Ming University	3	0.90

Table 10. Top 20 corresponding author institutions (N = 335)

Table 10 shows the most contributing institutions among the 335 articles. Results show that almost 90% of the contributing institutions consist of national universities, while the remaining are private institutions. Such results might suggest that national universities are more research oriented than the private ones. Further analysis in conjunction with Table 11 shows that although majority of the corresponding authors' country is registered as Taiwan. There are indeed quite a number (around 20%) of the corresponding authors coming from other countries. With the assumption that both the articles' first and the corresponding authors are the major contributors of a paper. Such results somewhat suggest that not all of the publications are initiated by local scholars. However, these results suggest that Taiwan scholars are also well connected in the international research arena.

Countries	*n*	%
Taiwan	293	87.46
USA	20	5.97
China	3	0.90
Germany	2	0.60
Australia	1	0.30
Canada	1	0.30
England	1	0.30
France	1	0.30
Hong Kong	1	0.30
Scotland	1	0.30
Switzerland	1	0.30
Missing	10	2.99

Table 11. Corresponding authors' country (N = 335)

With regards to the keyword analysis, results for Tables 12 to 14 are all findings generated with use of the Concordance Software. Table 12 shows the top most author supplied keywords and publisher provided keywords. As mentioned in the previous discussions, publications are mostly related to Mandarin Chinese and English language learning, and issues regarding the four skills. Furthermore, such results are highly supported by Tables 13 and 14. Upon the combination of keywords and bibliometric data analysis for the past decades, results suggest that authors indeed shaped their research themes in line with the ISI WOS journals' themes.

Keywords	*n*	%
Mandarin Chinese	53	4.56
English	28	2.41
Language	20	1.72
Comprehension	16	1.38
Students	15	1.29
2nd Language	14	1.20
Speech	14	1.20
Children	12	1.03
Acquisition	11	0.95
Words	11	0.95
Discourse	10	0.86
Instruction	10	0.86

Classroom	9	0.77
Taiwan	9	0.77
English as Foreign Language	8	0.69
Identification	7	0.60
Knowledge	7	0.60
Model	7	0.60
Verbs	7	0.60
Construction	6	0.52
Grammar	6	0.52
Movement	6	0.52
Pronouns	6	0.52
Readers	6	0.52
Relative Clauses	6	0.52
Semantics	6	0.52
Speech Production	6	0.52
Time Course	6	0.52

Table 12. Top keywords and keywords provided (N = 1182)

Note. Publisher provided keywords.

Headwords	*n*	Headwords	*n*
Chinese	87	Reading	17
Mandarin	45	Phonological	15
Language	36	Writing	15
Learning	31	Discourse	11
EFL	26	Learners	11
Taiwan	26	Evidence	10
Effects	25	Speech	10
English	25	Strategies	10
Processing	17	Students'	10

Table 13. Top concordance results on article titles

Headwords	*n*	Headwords	*n*
Language	247	Children	57
Chinese	214	L2	57
Students	197	Speakers	56
English	185	Lexical	55
Learning	164	Discourse	51
Mandarin	107	Teachers	51
Reading	99	Speech	49
EFL	84	Syntactic	49
Writing	80	Anxiety	45
Learners	75	Processing	43
System	71	Role	43
Word	71	Syllable	42
Phonological	70	Sentences	41
Strategies	68	Clauses	40
Taiwan	66	Structure	40
Semantic	59	Tone	40

Table 14. Top concordance results on article abstracts

Conclusion

The main objective of the current study is to provide both a macro and micro perspectives on the *Language and Linguistics* research trends in Taiwan for the past 40 years. Data were downloaded from the ISI WOS database. It is said that ISI WOS indexed articles are used as a sort of performance benchmark for the academe. Hence, an in-depth analysis of previous research trends should be able to help educators and scholars understand how knowledge production is shaped through the years. A total of 335 articles which fall in the *Language and Linguistics* category and having a registered institution coming from Taiwan were downloaded. Bibliometric and keyword analysis were then accomplished using concordance software.

Initial findings show that older seminal articles still exhibit a statistically significant higher citation rating. However, in a wider sense, findings suggest that knowledge production is governed to a rising scale through practices based on market-like operations. In order to get published, scholars tend to shape their publication (research focus) towards the journals' themes. Furthermore, journal inclusion in the ISI WOS database ultimately shaped the research trend, for the academe tends to value papers published in indexed journals.

For the past 40 years, the research interests are focused on the *Chinese* and *English* language learning, and the development of the *four essential skills*. However, further analysis of the current data suggests that with the inclusion of *computer (technology)* related and *applied linguistics* journals, increased emphasis are now placed on such research topics. Furthermore, newer articles tend to have a statistically significant higher number of author provided keywords and ISI WOS provided keywords, increased collaboration, and higher number of references. Such practices are becoming more relevant in the publishing industry, since, additional keywords would mean the increased opportunity for the paper to be search, download, and read. With the notion of global readership, international collaborations are also seen as a way to broaden the article's perspectives. Lastly, publications are mostly contributed by scholars who are in the national universities.

In sum, as both the academe and the publication industry become more globalized, changes regarding the true essence of knowledge production, distribution, and access are highly governed by economic forces. It is noted that higher education institutions and the academe should take note of such forces before strictly enforcing policies that are highly dependent on such citation databases.

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Facilitating the Implementation of ICT to Teachers

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Bio Data
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Abstract
For the last decade, English language teaching has been characterized by buzzwords, such as E-learning, ICT, CALL, and Web 2.0. In a pragmatic manner, this article discusses and illustrates how institutions and teachers can facilitate the integration of technology into their classrooms. The article will examine factors that might impede or facilitate institutions and teachers to overcome the social and educational barriers that may prevent them from achieving their true potential.

Introduction
Technology is transforming the way we work and provides new opportunities for learning, but it also has the potential to become a stumbling block to good teaching and learning. In 1916, Dewey wrote, "nothing has brought pedagogical theory into greater disrepute than the belief that it is identified with handing out to teachers recipes and models to be followed in teaching" (p. 170). The pace, progress of Information and Communication Technologies (ICT) development continue to outstrip the pace of the pedagogical developments. This could be seen as a substantial barrier to teaching and learning with ICT, as teachers are not keeping pace with their students. In educational institutions today, ICT has the potential to improve educational methods and the quality of teaching and learning; however, the advantages of ICT are often under-realized (Surry & Farquhar, 1997), poorly implemented, and are based on unfounded optimism (Taylor, 1998). Furthermore, research has found serious obstacles to full integration of technology into the teaching and learning processes of higher education (BECTA, 2004). One of the largest obstacles in implementing technology is the negative attitude teachers have towards technology in the classroom (Efaw, 2005). For instance, it has been suggested, "there

is no progress . . . in how we teach, despite what might be possible with the new technology" (Laurillard, 2002, p. 20). ICT must win over the "hearts and minds" of the teaching profession (Wheeler, 2005).

The purpose of this article is to discuss and illustrate pragmatically the manners by which institutions and teachers can implement ICT and overcome teacher- and school-level barriers. Teacher-level barriers include lack of time, lack of self-confidence, negative experiences in the past, lack of knowledge. Likewise, school-level barriers include lack of ICT equipment, lack of technical support, lack of administrative support, and lack of training. This article takes a pragmatic stance in discussing how institutions and teachers can best implement and transform their environment into a digital one.

Literature Review

Expectations are changing. Institutions want to transform to incorporate ICT where possible. The question is, what constitutes an educational technology? How will this transformation be led, managed, and facilitated?

What are ICT and Educational Technology?

Information and Communications Technology is a term widely used, which covers a wide range of hardware and software. ICT may mean any of the following: personal computers, MACs, iPads, iPods, scanners, mobile phones, and printers (Gillespie, 2006). Educational technologies can be defined as "the theory and practice of design, development utilization, management, and evaluation of processes and resources for learning" (Seels & Richey, 1994, p. 129). The implementation of educational technologies is an important step in developing a university and its curricula, as Laurillard (2000) pointed out, for "engagement with others in the gradual development of their personal understanding" (p. 137). E-learning is a major "force of change" (Clark, 2008, p. 1) and certain changes might be required for its implementation and development; these changes are difficult and cannot be forced from the top to bottom. Instead, it needs to be the individual who is the primary focus of change (Fullan, 1993).

Educational Change and Innovation

Educational change depends upon what teachers do and think (Fullan, 1982), and to implement change is a complex task. Fullan (2001) identified 7 principal stakeholders

in managing change: the dean, the teaching staff, senior administrators, student teachers, school teachers, government agencies, and business and industry. To successfully implement change, such as technology in the classroom, shared leadership and responsibility should be encouraged in which all stakeholders can learn and support each other. A few models have been devised to help explain the process, which will be discussed below.

Educational Change Models

Where do we start to introduce ICT to teachers? Rogers (1995) has written extensively on diffusion of innovations and defines it as the "process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5). Rogers defines an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit on adoption" (p. 11). Rogers identified five key attributes of innovation, relative advantage, compatibility, complexity, trialability, and observability. Several studies (Ellsworth, 2000) have used Rogers's five attributes and acknowledged that they dramatically improve the chances of adoption of innovation.

On the other hand, Ely (1990) identified eight conditions that are required to successfully introduce ICT to teachers and institutions. They are: dissatisfaction, assistance, infrastructure, time, incentives, participation, commitment, and leadership. In a practical way, Ely explains what is a necessary condition of each and how to fulfill them.

Havelock and Zlotolow (1995) designed a successful model that has been successful in teacher education in US Universities (Thompson, Schmidt & Davis, 2002). They provide a practical seven-stage model as a guide for institutions to follow, C-R-E-A-T-E-R. Their model helps to determine what the key stages are in any planned change and what should be done at each stage.

There are several other change models available, including change agent's guide and concern-based adoption model. One model is not necessarily to be preferred over another. Instead, they complement each other and should all be consulted when planning innovation and change.

Four Essential and Practical Components

In the past decade, institutions have started to transform themselves in order to incorporate more and more ICT in their learning. However, as Frey (2002) points out,

"despite all the rhetoric to the contrary, institutions seem unable to take concerted steps toward the conception of the 'new university' that so many have insisted is needed to accommodate a full flowering of the technological and knowledge revolution" (p.10). To successfully implement ICT in an educational institution, several essential components need to be considered to support ICT in teacher development. It is imperative that members of the faculty, staff, and administration are included in the planning effort and that each take into consideration their conditions, culture, and context. Where educational institutions are able to take these issues into consideration, training stands a good chance of being successful. Below, four essential conditions will be briefly examined.

Shared Vision

Before developing a professional development plan for its teachers, institutions should find out which technical skills and pedagogical approaches teachers want prioritize for their professional development. This could be done by a simple questionnaire or by individual discussions with teachers as part of their yearly appraisal. The institutions can then match those results with their overall development plan and the teacher's individual development plans. Throughout this process, there must be an understanding of how and why the implementation of ICT takes place. A breakdown in communications could have devastating effect to the overall progress. The flow of communication must be bidirectional - top-down and bottom-up. To successfully integrate ICT, a collaborative environment is essential.

Access

To support integration of ICT educators must have stable access to current technologies, software, and a reliable Internet connection. The pace of progress and compatibility issues have often meant that equipment in schools have become unreliable and/or has quickly become obsolete. In using ICT, a major barrier to teachers' development is that their technological development is faster than their pedagogical development.

Professional Development

Educators should be encouraged and supported by their institutions to participate in professional development as technology constantly changes. Professional

development should be continuous and concentrated on the needs of the teachers and/or administration, and sustained through coaching and periodic updates.

To provide teachers with the best possibility of successfully integrating ICT, institutions need to schedule the timing of the training carefully. They should make time available regularly on teachers' schedules, preferable on a weekly basis. Teachers need to know they have time available on a consistent base to change, implement, and develop their professional practices. Furthermore, to integrate the development into their practices they need support from trained technicians and trainers who should be made available to them during their weekly training sessions.

Technical Assistance

The emphasis of the educator should be on teaching and learning and not on maintaining and repairing the technology being used beyond basic trouble shooting procedures. Institutions should provide technicians to keep computer labs up-to-date, to provide technical support, and to update software on teachers' computers and in the labs. If not, educators might lose interest in ICT because of the frequent breakdown in technology. Therefore, it is imperative that institutions provide technical assistance so educators can feel confident that they can use technology in their teaching and learning.

Part of this technical assistance should be to demonstrate that most programs contain a *help* button on the top toolbar. This provides support in finding out how to operate the software, as well as to know how to access the software website that can provide useful support, especially in the area of *frequently asked questions* (FAQ). Both of these would empower the teacher to solve his/her own basic problem(s) and relieve technicians from the most rudimentary questions.

Practical Tips for Teaching Technology to Teachers

According to Becker and Reil, "teachers who exhibit traits considered important for effective teaching will make more effective use of technology." In the "too much information age" (Gilbert 2000) we do not need "greater access to information, instead, we must learn to navigate and understand this sea of information" (Garrison & Anderson, 2003, p. 6). To help teachers embrace technology as part of their teaching, five practical tips will briefly be discussed below.

Practice & Practice

The first step in teaching teachers to use technology in their classrooms is to educate them in small groups. Studies show that to reach optimal results, these training sessions should be kept between 8 to 12 participants (Abbot and Farris, 2000) to enhance teachers' uptake of new concept and skill sets. Abbot and Farris (2000) also found that teachers had a more positive attitude towards computers after receiving introductory training on their uses and capabilities. Furthermore, Zhao et al., (2002) found that to successfully implement technological innovation, teachers need to know how to use the appropriate applications, (e.g., Word, Excel, PowerPoint, and Outlook). For teachers to start using technology in their classes they must first feel comfortable with the technology and this can only happen after extended practice in a secure environment.

Mentor

Sharing and discussing what does and does not work is a valuable tool for professional development. Teachers should set aside an hour every week to discuss learners and usage of software with experienced teachers. This could be done one-to-one or in small groups. The key is to have access to a teacher who is experienced in incorporating technology to try out ideas with.

Model classes

Observing model classes taught by expert teachers will stimulate new teachers to incorporate technology into their own classes. Also, this serves as an excellent opportunity for them to ask questions about possible challenges and pitfalls of applications. Another important aspect of model classes is that teachers will be the student and this role forces them to actively engage with technology in order complete various tasks.

Feedback

Feedback is important throughout the process to find out if the stated goals have been met. Also, if it is used in a formative way, it will allow for changes during the implementation process. The complexities of teaching with ICT, both pedagogical and technical, make it difficult for teachers, trainers, and administrators to always keep aware of the big picture of what is trying to be achieved. Feedback will allow all the stakeholders in the process to obtain a reliable picture of the program's effectiveness.

Forums

Most institutions use some kind of virtual learning platform, such as Moodle, Blackboard or PowerCampus, in which they can incorporate a forum where teachers can share ideas, lessons learned, and successes. If an institution does not have access to a virtual learning platform the same ideas can be distributed in a weekly/monthly email or newsletter within the institution or department. Research has shown that teachers who work together demonstrate exemplary use of computers (Becker and Riel, 2000).

Pedagogical Support

Both institutions and teachers need inspiration and guidance to incorporate ICT pedagogy. The British Educational Communications Technology Association (BECTA, 2003) provides a range of online and downloadable advice about ICT pedagogy, both in terms of general issues, such as personalizing learning and in terms of specific issues, such as what research has shown about the use of interactive whiteboards: http://becta.org.uk/.

Another excellent resource that institutions and teachers can use is the Nesta Futurelab, which also publishes advice and literature reviews on issues connected with pedagogy of ICT in schools: http://nestafuturelab.org/. For teachers to become proficient in using educational technology in teaching and learning, we need to help them understand how to use technology to facilitate meaningful learning (Law, 2008).

Action Plan - Institutions

An important aspect of sustaining the professional development of teachers and the ICT implementation is to develop long-term action plans. Obviously, different schools have different situations and needs and, therefore, need different approaches. However, there are a few general approaches that would benefit any institution that strives to keep up to date with technological and pedagogical development(s).

First, assess what technology they do have currently and if they are truly using it to its full potential. Part of this first step is to keep a detailed record of all the ICT equipment, including when the institution received/bought them and where they are kept. Also, by keeping a log sheet attached to computer labs, scanners, and projectors they can gain a firm understanding how often equipment is used. By this simple method, institutions can make sure they are utilizing what is available and can easily evaluate what ICT equipment their teachers are using. Second, will investment in new

technology fit with the school, the building and the teachers who will use it? Third, examine if any funding is available and if it is possible to reallocate a portion of the budget to use it more intelligently in terms of technology. Additionally, institutions should plan for new purchases of computers and software updates years in advance.

Action Plan - Educators

Educators also have a responsibility to develop their own action plan to stay up-to-date with the latest developments in their fields. They should plan on attending conferences, workshops, and individual courses at nearby colleges. Trinity College has developed a new course, *Certificate in Teaching Languages with Technology,* that is available both in a face-to-face, blended learning format and entirely online. This is an excellent opportunity for educators to learn the latest and most relevant usage of ICT.

Conclusion

The computer and the Internet are transforming all aspects of society. Implementing and teaching with ICT is a complex matter, which this article has attempted to show. This article was intended to discuss pragmatically the manners by which institutions and teachers could start to implement and develop their ICT skills. Learning and teaching with ICT is exciting, motivating and challenging. ICT can instruct teachers and learners to communicate and work with one another in new ways which may better suit their style of learning. In reality, aiming for implementation of ICT might seem challenging, but there are things that can be done, in the short and long term, which will ease the overall process. The future of education is educational technology, and it is simply not possible for institutions and teachers to ignore what are revolutionizing other parts of society.

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