DETERMINANTS AND EFFECTS OF ENGLISH LANGUAGE IMMERSION IN TAIWANESE EFL LEARNERS ENGAGED IN ONLINE MUSIC STUDY

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Abstract

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The purpose of this study was to identify the factors that determine English language immersion (ELI) in Taiwanese EFL learners and to determine if ELI is a predictor of change in vocabulary level and American lifestyle literacy during online music study. The results of the investigation indicate that age, gender, and academic standing are all determinants of ELI in Taiwanese EFL learners. However, they also suggest that ELI alone is not a good predictor of change in vocabulary and lifestyle literacy acquisition during online music study. In addition, the investigation found that some minimal level of English competency is required to benefit from the type of online learning environment described and that the subjects who participated in the study enjoyed the approach to learning English.

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Introduction

In the world today, there is a significant move toward the adoption of the English language as the common protocol for global human communication. Indeed, English has become a language in which non-native English speakers could well surpass the number of native English speakers by the end of this decade (Yu, 2005). Although some would argue that the western world (and the US in particular) is behind this move for colonial/imperialistic reasons (Alavinia, 2005), it is unlikely that this is so, at least deliberately. It is more likely that English has become the *de facto* common language because of the economic implications of trade with the US and other English-speaking countries as well as the fact that English is the predominant language of the Internet—an ever more present element in our global society. As Fromherz (2005) asserts, language compatibility and clear communication is required if we expect to achieve peace and understanding in our world. Thus, it is important that we not underestimate the value of empirically-based English as a Foreign Language (EFL) and English as a Second Language (ESL) instructional research.

A number of experienced EFL/ESL educators and researchers have asserted that listening to music can enhance listening skills in learners (Christopher, 1998), can be used to expand a

learner's vocabulary and assist them in gaining familiarity with colloquial expressions (Diamond & Minicz, 1994; Lin, 2005; Medina, 1993, 2000, 2003; Milano, 1994), and can be used to improve cultural knowledge (lifestyle literacy) in EFL/ESL learners (Diamond & Minicz, 1994; Milano, 1994). Both Medina (2000, 2003) and Castellanos-Bell (2002) assert that research in the area of music in EFL/ESL learning is in its preliminary stages and more qualitative and quantitative data on the subject is necessary.

Research Methodology

Hypotheses

This investigation centered around the following research questions: What demographic factors determine English language immersion (ELI), and is ELI a predictor of change in vocabulary level (VL) and American lifestyle literacy (LL) in Taiwanese EFL learners engaged in online music study? The general null hypotheses, then, were:

H_1: Demographic variable x does not influence ELI

H_2: ELI is not a predictor of change in VL

H_3: ELI is not a predictor of change in LL

For this study, each subject was given an ELI score based on his/her responses to the following questions: 1) How often do you write (papers, letters, e-mails, etc.) in English? 2) How often do you watch (TV, videotapes, DVDs, etc.) in English? 3) How often do you read (books, newspapers, magazines, etc.) in English? and 4) How often do you speak in English? Each question was answered on a 4-point Likert-type scale. Combining these variables yielded scores from 0 to 16 (no ELI to a relatively high level of ELI). It was speculated that increases in ELI would positively affect vocabulary acquisition and lifestyle literacy in the subjects. This is because the more immersed one is in a subject, the more knowledge he/she possesses about it, which in turn permits him/her to more easily and efficiently attach new knowledge to his/her existing knowledge structures—a notion that Rumelhart and Norman (1978) refer to as 'accretion.'

Design of the Website

A website was created to facilitate this investigation. This website, developed entirely in English, included a login page, an orientation page, a demographic survey page, a pretest and posttest page, and four sets of four treatment pages (sixteen treatment pages total). Based on the login ID and password supplied to the learner, he or she was presented with one of the four experimental treatments. All data associated with the demographic survey, pretest, posttest, and treatments was collected automatically by the website.

Experimental Procedures

For this investigation, a completely randomized experimental design was utilized. The four experimental conditions were:

1. Song only (S)
2. Song plus lyrics (SL)
3. Song plus lyrics plus definitions of selected vocabulary words (SLD)
4. Song plus lyrics plus definitions of selected vocabulary words plus audio explanation of the song (SLDE).

Thus, each successive condition represented a higher degree of media intensity/extralingual support.

Before the study commenced, the onsite coordinator described for the subjects the general procedures for the experiment and asked them to voluntarily participate in exchange for extra course credit. Each subject was then randomly assigned a pre-created login ID and password combination, each of which was associated with exactly one of the four experimental conditions. After receiving their login ID and password, the EFL learners were asked to log into the experimental website and complete a number of pre-treatment activities. These activities included completing a demographic instrument and completing the VL and LL pretests.

After these tasks were completed, the subjects were given three weeks to listen to and study the assigned, downloadable songs *as many times as necessary to fully understand them* and then complete the associated learning activities. These activities were derived from the literature and are regularly used by professional ESL educators. For each song, the subject were asked to summarize the theme of the song (Lems, 2001; Garza, 1994), summarize any cultural aspects of the song (Garza, 1994), and list any new words learned in the song and their definitions (Diamond & Minicz, 1994).

The six songs selected for this investigation were chosen because they all possess elements of and/or commentary on American culture, and they represent a variety of musical styles, tempos, and subjects. All songs were written by the same person and performed by the same band under the same recording conditions. To control for variation in the songs, the songs were automatically presented to each subject in random order.

After all treatment activities were done, the EFL learners were asked to complete the VL and LL posttests. After all treatment activities were done, the EFL learners were asked to complete the VL and LL posttests. Figure 1 illustrates the general structure of the website and experimental design.

Figure 1. General Structure of the Website and Experimental Design
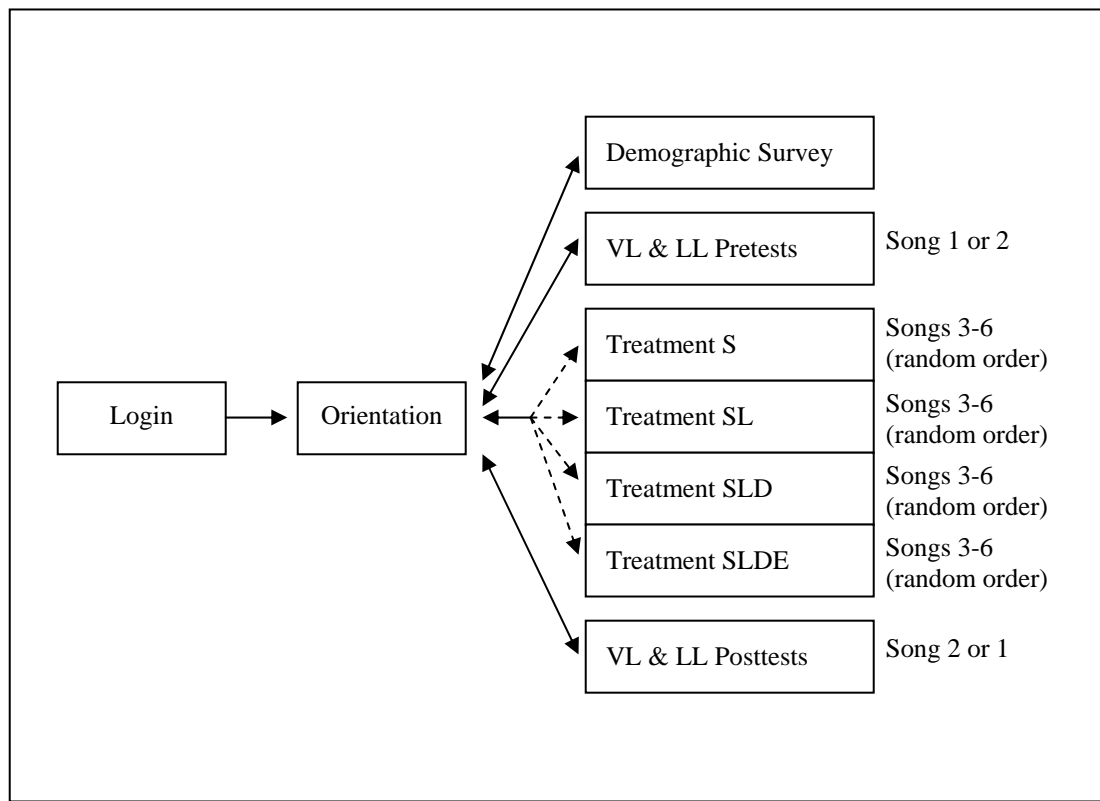
* The dashed lines indicate that a given subject was directed to only one of the four experimental treatments.

Results

Subjects and Sample Size

The subjects in this study consisted of 149 undergraduate Taiwanese EFL learners from two large comprehensive universities in Taiwan. All the freshmen subjects were non-English majors studying in the College of Natural Sciences, more than half the sophomores were Foreign Language majors (with an emphasis in English), and all the juniors and seniors were English majors. Of the 149 subjects that began the study, 108 completed the study fully. The 41 subjects who failed to complete the study were mostly non-English majors. (Although specific major/minor data from the subjects was not collected, the on-sight researcher was able to categorize them appropriately.) Figure 2 summarizes the demographics of the participants.

Figure 2. Study Participant Demographic Summary

Variable	Levels	# of Participants
Age	Less than 20 years old	12
	20-29 years old	81
	30-39 years old	12
	40-49 years old	3
	50-59 years old	0
	More than 59 years old	0
Gender	Male	25
	Female	83
Mother Tongue	Chinese	62
	Taiwanese	37
	Hakka	4
	English	0
	Other	5
Academic Standing	University Freshman	7
	University Sophomore	23
	University Junior	37
	University Senior	41
	Masters Student	0
	Doctoral Student	0
	Other	0

Omnibus F-Tests

Omnibus F-tests were conducted to determine if any statistically significant differences existed among the demographic variable means for ELI; that is, to determine if null hypothesis H_1 could be rejected. The alpha level for all F-tests was set at 0.05. Figure 3 shows the results of the omnibus F-tests. The results of the omnibus F-tests showed significant differences between at least two of the means with respect to age, gender, and academic standing, thus permitting the rejection of null hypothesis H_1 for these variables.

Figure 3. Omnibus F-test results of the demographic variables

Demographic Variable	ELI
Age	4.16 (0.008)**
Gender	4.88 (0.029)*
Mother tongue	0.27 (0.846)
Academic standing	7.25 (0.000)**
Years studying the English language	1.49 (0.212)
Going to school in an English-speaking country	1.62 (0.206)
Years studying in that country	0.83 (0.481)
Motivation for studying the English language	0.68 (0.609)
Favorite style of American music	0.68 (0.757)
Level of musical ability/skill	0.93 (0.396)

$*p<0.05; **p<0.01$

Tukey-Kramer Post Hoc Pairwise Tests

Since the sample n's for the various demographic groups were relatively unequal, the Tukey-Kramer test (a modification of Tukey's HSD test) was used for the follow-up (post hoc) evaluation of all pairwise means. This test is the recommended post hoc procedure when there is a moderate or large imbalance among sample n's (Kirk, 1982). The alpha for all post hoc comparisons was set at 0.05. Figure 4 and Figure 5 show the results (q_i) of the post hoc pairwise comparisons. A post hoc comparison was not required for gender since only two means existed in the omnibus F-test.

Figure 4. Results (q_i) of the Tukey-Kramer Pairwise Comparisons for Age

To what age group do you belong?	<20	20-29	30-39
20-29	4.89*		
30-39	2.60	1.46	
40-49	1.47	0.96	0.17

*p<0.05

Figure 5. Results (q_i) of the Tukey-Kramer Pairwise Comparisons for Academic Standing

What is your academic standing?	University Freshman	University Sophomore	University Junior
University Sophomore	6.22*		
University Junior	6.19*	0.49	
University Senior	6.14*	0.66	0.19

*p<0.05

Further Analysis of the Means

An evaluation of the Tukey-Kramer pairwise comparisons for age as well as a visual inspection of the confidence interval graph prompted a pooling of the data for those subjects 20 years old and over and another ANOVA. In the same way, the data for the sophomores, juniors, and seniors was pooled, and another ANOVA was performed. The analysis showed a significant difference (F=11.10; p<0.01) between the means for those subjects less than 20 years old (μ=9.25) and those subjects 20 years old and over (μ=11.40) as well as a significant difference (F=21.90; p<0.01) between the means for the freshmen (μ=7.71) and the sophomores, juniors, and seniors (μ=11.40).

Regression Analyses

Finally, in an effort to test hypotheses H_2 and H_3, a regression analyses was performed to determine if ELI was a predictor of change in vocabulary level and American lifestyle literacy. The results of the *overall* regression analysis for VL was R^2=2.8 (p=0.08), which approached significance. The results of the *overall* regression analysis for LL was R^2=0.1 (p=0.74). Since these results were not significant, an attempt was made to determine if ELI was a predictor of

change in VL and LL within the four treatment groups. Figure 6 shows the results of these analyses. Since none of the results were significant, neither null hypothesis H_2 nor null hypothesis H_3 could not be rejected.

Figure 6. Results of the Regression Analyses for ELI as a Predictor of Change in VL and LL in the Four Treatment Groups

	Group S	**Group SL**	**Group SLD**	**Group SLDE**
VL	R^2=8.9 (0.11)	R^2=0.0 (0.98)	R^2=2.9 (0.35)	R^2=0.0 (0.93)
LL	R^2=0.1 (0.85)	R^2=0.1 (0.92)	R^2=0.3 (0.76)	R^2=9.4 (0.18)

*p<0.05

Discussion

The finding that ELI was significantly lower for those subjects less than 20 years old than for those subjects 20 years old and over, and the finding that ELI was significantly lower for freshmen than for sophomores, junior, and seniors, are probably inextricably linked. All the freshmen in the study were non-English majors, while more than half the sophomores were Foreign Language majors, and all the juniors and seniors were English majors.

In Taiwan, most senior high school students are exposed to English, Chinese, Mathematics, Natural Sciences, History, Geography, and so on, in roughly the same temporal proportions. At this level, they typically devote themselves to English for about two hours a day. When they complete their high school educations (around the age of 18), they, like their US counterparts, become college freshmen. In college, most of these students are formally exposed to English only about two hours per week for three semesters during their freshman and sophomore years. If not particularly interested in pursuing English, these students will typically continue to utilize Chinese in their subject matter courses. However, those students interested in English (believing that English will be beneficial to their careers) eventually declare an English-related major (either English or Foreign Languages) where they are immersed in the English language for eight or more hours a day.

The finding that ELI was significantly lower for the males than for the females is likely linked to academic standing as well. In the study's sample, the group composed of freshmen had a higher ratio (1:1) of males to females (4 males to 3 females), while the group composed of sophomores, juniors, and seniors had a lower ratio (1:4) of males to females (21 males to 80 females). Again, in Taiwan, the non-English-majoring freshmen are officially exposed to English for only two or three hours per week.

The results of the regression analyses indicate that ELI alone (as it was defined in this study) is not a good predictor of change in vocabulary and lifestyle literacy acquisition during online music study—although the results of the overall regression analysis for vocabulary acquisition did approach significance. This finding is surprising and inconsistent with the theory of accretion, which asserts that the more knowledge one possesses about a subject (which is presumably true for those more highly immersed in the English language), the easier it is for him/her to learn more in that area since they are able to attach new knowledge to existing knowledge structures (Rumelhart & Norman, 1978). A partial explanation of this incongruence is that, due to a lack of conformance with the experimental procedures prescribed for the study, an

undesirable amount of random variation was introduced into the data. In the future, the authors plan to replicate this study with much more tightly controlled experimental procedures.

Finally, it seems appropriate to point out a couple of other interesting observations with respect to the online music study method of EFL instruction used in this study. First, of the 41 subjects who failed to complete the study, most were non-English majors. A common complaint communicated to the researchers by these subjects was that they simply did not understand English well enough to proceed. Thus, it seems likely that some minimal level of English competency is required to benefit from this type of online learning environment. Second, many of the English majors who initially refused to volunteer for the experiment, eventually asked to join after hearing of the positive experiences of the first group of volunteers who found the experiment interesting.

Summary and Conclusions

The move toward the adoption of the English language as the common protocol for global human communication has prompted increasing interest in empirically-based EFL and ESL instructional research. The purpose of this study was to identify the factors that determine English language immersion (ELI) in Taiwanese EFL learners and to determine if ELI is a predictor of change in vocabulary level and American lifestyle literacy as a result of online music study. The results of the investigation indicate that age, gender, and academic standing are all determinants of ELI in Taiwanese EFL learners, but that ELI alone is not a good predictor of change in vocabulary and lifestyle literacy acquisition. This is indeed a counter-intuitive finding in the light of Rumelhart and Norman's (1978) theory of accretion. Further study in this area is needed.

On the other hand, online music study should be considered a viable tool in the EFL instructional toolbox because experienced practitioners report that modern music study (1) is enjoyable, (2) is motivational, (3) is relevant to students' lives, and (4) can increases the diversity of available EFL learning activities, which can play to the multiple intelligences of diverse learners (Christopher, 1998; Diamond & Minicz, 1994; Haskell, 1999; Moi, 1994; Medina, 2002). Furthermore, although more empirical research is necessary to validate such claims, the potential benefits of online music study include (1) enhanced listening, speaking, and reading skills, (2) improved recall, (3) expanded vocabulary, (4) improved familiarity with American colloquial expressions and idioms, (5) increased active, enthusiastic, and productive participation in the learning process, (6) improved awareness of American speech patterns, (7) increased awareness of American cultural and emotional issues and biases, (8) increased confidence, (9) a more relaxed learning environment, and (10) improved general receptiveness to learning (Christopher, 1998; Diamond & Minicz, 1994; Garza, 1994; Haskell, 1999; Maley, 1987; Medina, 2002; Milano, 1994; Murphey, 1992; Poppleton, 2001).

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