Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 173 (2015) 71 – 78

Procedia
Social and Behavioral Sciences

32nd International Conference of the Spanish Association of Applied Linguistics (AESLA): Language Industries and Social Change

Exploring and assessing effectiveness of English medium instruction courses: The students' perspectives

Da-Fu Huang[a]*

[a]*Southern Taiwan University of Science and Technologz,#1Nan-Tai St, Yong-Kang Dist, Tainan 71005, Taiwan*

Abstract

This paper investigates students' perceptions of the English medium instruction courses at Southern Taiwan University of Science & Technology (STUST) in terms of their learning motivation, learning anxiety, and learning achievement. 157 students, including 93 local and 64 foreign students, participated in the study by completing a self-assessment questionnaire on EMI course taking experiences. A quantitative method was employed to analyze data, performing statistical procedures of descriptive statistics, independent-samples t-tests, and Pearson correlation using SPSS 17.0. The major findings of the study are as follows: (1) most participants were motivated to take EMI courses to strengthen English ability and professional knowledge, (2) most participants agreed with the helpfulness of EMI courses, (3) interactions with students of other nationalities motivated learning, (4) major anxiety experienced by local students stemmed from self-perceived low English proficiency, (5) there exists significant reverse association between learning anxiety and achievement or motivation, and (6) there exists significant differences between local and international students in measures of motivation, anxiety, and achievement.

Peer-review under responsibility of Universidad Pablo de Olavide.

*Keywords:*English medium instruction, EMI, Content and Language Integrated Learning, CLIL

1. Introduction

English as an international language has been a key indicator of success of globalization for countries regardless of whether English is spoken as a second (ESL) or foreign (EFL) language. Many researchers have suggested that a

* Corresponding author. Tel.: +1-886-6-2533131#6005
E-mail address: dfjhuang@maill.stust.edu.tw

Peer-review under responsibility of Universidad Pablo de Olavide.
doi:10.1016/j.sbspro.2015.02.033

second language is most successfully acquired when the conditions are similar to those present in first language acquisition (Krashen & Terrell, 1983; Long, 1990; Lightbown & Spada, 2006). Although BE is still controversial, research has clearly revealed that it is at least as efficient as monolingual education when properly implemented. Originally intended as a "European need" for the development of plurilingual and pluricultural competence of the future European citizens, the pedagogical approach of Content and Language Integrated Learning (CLIL) was created which combined and stressed both content subject learning and acquisition of an additional language (Coyle, 2002; Darn, 2006). English Medium Instruction (EMI) as a most dominant mode of CLIL has since been widely implemented and promoted throughout the world as business communication and academic exchange are becoming increasingly globalized. Previous literature contextualized mostly in different educational levels of European countries has presented both favorable effects (Alonso, Grisalena & Campo, 2008; Dalton-Puffer, Huttner, Schindelegger & Smit, 2009; Infante, Benvenuto & Lastrucci, 2008; Loreanc-Paszylk, 2009; Zabore, 2008) as well as less than favorable effects (Airey, 2009) of CLIL learners' productive skills, receptive skills, and lexical richness.

EMI programs and projects have also been mushrooming beyond the European territory shortly after a trial period of CLIL and its variant modes in Europe. For example, a number of CLIL studies conducted in Asian contexts (Lee & Chang, 2008; Mackenzie, 2008; Marsh & Hood, 2008; Sasajima, Ikeda, Hemmi, & Reilly, 2011), for example, presented rather conservative and apprehensive perspectives of the CLIL approach in terms of teacher readiness and its replacement of the conventional approach, while recognizing the relative advantages of CLIL as a means to intriguing motivation, developing multiple intelligences, and showing relevance of English in the global educational setting. At the sway of the globalization of higher education, the Ministry of Education (MOE) of Taiwan has recently embarked on a series of promotional campaigns for EMI programs at higher education institutions with a view of gaining a competitive edge at the global higher education arena while elevating English ability of local students.In response to this global trend, many universities in Taiwan began to incorporate EMI into curricula with an increasing number of EMI courses being offered in tertiary schools (Hu, Chen & Liu, 2008; Teng, 2009). Southern Taiwan University of Science & Technology (STUST), for example, has offered EMI classes since 2005. The incoming local students, however, did not possess sufficient English ability, while most of the enrolled international students came from countries where English is not the native language. The EMI faculty comprised primarily of local teachers whose English delivery skills could barely live up to the desirable levels. The teaching quality of the EMI program and the learning obstacles have hence become one of the major issues that deserve in-depth investigation, and understanding students' perspectives of the EMI courses, in particular, would help to improve the teaching practices and effectiveness of EMI.

Published literature reporting EMI research investigated little concerning students' perceptions of EMI courses studied in the context of Taiwanese higher education. Among such few studies, Chang (2010) found that the students overall did not think that they had a high level of comprehension of their EMI lectures.

Along the same lines as Chang (2010), Wu (2006) examined college students' attitudes towards EMI in terms of the feasibility and the likely obstacles of EMI in an EFL learning environment. While recognizing the benefits of EMI, most students reported difficulties in understanding the content and learning materials. Similar results were presented in Wu (2006), Huang (2009), and Huang (2012), who, moreover, proposed team teaching of content and language teachers. Liu, Chang, Yang, and Sun (2011) touched furthermore on more pragmatic considerations of career development and student needs when faced with the choice of EMI courses. Hsieh and Kang (2007), on the other hand, showed no significant difference between the Chinese-taught and English-taught courses.

The specific research questions of this study are stated below:

- What are students' perceptions of the EMI courses at STUST?
- Is student learning anxiety significantly correlated with student learning achievement in EMI courses?
- Are there any significant differences between local and foreign students in the perceptions of EMI courses?

2. Methodology

A total of 157 STUST students who were enrolled in EMI courses in the Engineering and the BusinessColleges participated in this research. Among the participants were 93 local studentsand64 foreign students, almost all of whom came from Southeast Asia. After obtaining the signed consent forms showing their willingness to join the

study, the participants completed a questionnaire survey on their perceptions of EMI at STUST. Before constructing the questionnaire, four foreign IMBA students and four local Engineering students were invited for interviews about their learning experiences and difficulties in EMI courses.

The Questionnaire on Student Perceptions of English Medium Instruction (QSPEMI) primarily contains 25 six-point Likert scale questions items, asking the participants to assess the degree to which they agree with the statements concerning motivation, learning difficulties, and learning achievements in EMI courses. A qualitative interview as a secondary instrument served to elicit in-depth responses from participants to gain a more profound understanding of the interviewee's own experiences and to probe into specific questions of research interest. With their consent for the interview and their understanding of the research purpose, confidentiality of their identities was secured and each of the eight participants (see Table 2) was interviewed using a semi-structured interview technique during a five-week period with questions regarding their motivation, perception, learning experiences, difficulties, anxieties, and suggestions with respect to EMI. The interviews were digitally recorded in MP3 format, and then transcribed and coded for further analysis and interpretation.

The analysis of the collected data was undertaken quantitatively and qualitatively to address the research questions. The data collection instrument together with data analysis methods were employed to respond to each of the research questions. The quantitative analysis involved compiling descriptive statistics to obtain numerical summaries of the survey data to allow for the examination of distribution in terms of indicators of central tendency as well as variability. Independent-samples t-tests and Pearson correlations were also performed to analyze group differences and gauge the association between a range of continuous variables such as learning motivation, anxiety, and achievement in EMI learning. The qualitative analysis, on the other hand, was conducted with the open-ended question response and interview data by transcribing, coding, and interpreting the data to derive any emerging themes for discussion.

3. Results

The reliability analysis of the survey questionnaire yielded an overall Cronbach of 0.86, indicating the acceptability of the reliability of the instrument. Also reaching the acceptable level, the reliability values for the three subscales of QSPEMI were 0.87, 0.77, and 0.93 for learning motivation, learning anxiety, and learning achievement, respectively.

The descriptive statistics including the means and standard deviations are given in Tables 1-3 respectively for the constructs of learning motivation, learning anxiety, and learning achievement in a descending order for the mean scores.

Table 1. Descriptive statistics for Motivation

Item #	Mean	SD
04	4.59	1.086
03	4.49	1.226
02	4.41	1.286
01	4.25	1.409
06	3.98	1.044
05	3.80	1.059
07	3.66	1.361
Motivation Mean	4.17	.929

Table 1 indicates that Item #4 “I like to interact with students of different nationalities in the EMI course” has the highest mean score, followed by Item #3 “I take the EMI course in order to strengthen my English ability“, Item #2 “I take the EMI course in order to strengthen my professional knowledge”, and Item #1 “I participate in the EMI course voluntarily”.

Table 2. Descriptive statistics for Anxiety

Item #	Mean	SD
09	4.40	1.240
01	4.32	1.490
02	4.22	1.443
06	4.16	1.163
03	4.06	1.444
07	3.92	1.385
05	3.92	1.209
08	3.90	1.153
04	3.50	1.279
Anxiety Mean	3.81	.687

For the subscale of learning anxiety summarized in Table 2, the top three response items are Item #9 “I ask the classmates for help when I encounter difficulty in the full-English courses”, Item #1 “The major difficulty I encounter in the EMI courses is my low English proficiency”, and Item #2 “Low English proficiency hinders my learning of professional knowledge in the EMI courses.”

Table 3.Descriptive statistics for Achievement

Item #	Mean	SD
07	4.87	1.164
09	4.52	1.343
02	4.52	1.158
03	4.33	1.211
04	4.31	1.280
01	4.31	1.260
05	4.30	1.201
06	4.24	1.282
08	3.36	1.486
Achievement Mean	4.24	1.105

Among the three constructs, learning achievement has the highest mean score of 4.24. As shown in Table 3 of the item descriptive statistics of learning achievement Item #7 "The EMI courses help me form the habit of reading the authentic literature and learning materials in English" is shown to have the top ranking, followed by Item #9 "As a whole, the EMI courses are helpful to me", and Item #2 "The EMI courses help to improve my English listening and speaking ability".

In response to research question 2 regarding the association between learning anxiety and learning achievement, a Pearson correlation was performed, yielding a significant correlation between the two variables as well as between some individual items of the two constructs, as shown in Table 4. Specifically, the constructs of Anxiety and Achievement were found to have a significant reverse correlations (r = -0.39, p< 0.1). were also shown to have significant correlations. Among the significant correlations among the question items of the two constructs, Q8 of Achievement was found to have the highest correlation with Q1, Q2, Q3, and Q4 of Anxiety, suggesting that the lower the participants consider their English ability, the less they can understand the course content, and the more they feel peer pressure, and thus the tougher they would find the EMI courses.

Table 4.Pearson correlation coefficients between Anxiety & Achievement

	Anxiety	Q1	Q2	Q3	Q4	Q8
Achievement	-0.39**					
Q1				-0.41**		0.40**
Q2						
Q3						
Q4				-0.39**		
Q5						0.39**
Q6						
Q7						
Q8		-0.62**	-0.65**	-0.65**	-0.44**	
Q9			-0.38**	-0.43**		

**Significant at the 0.01 level (2-tailed)

In response to research question 3 concering the difference between local and foreign students in their perceptions of EMI courses, independent-samples t-tests along with the Bonferroni procedure were performed to compare local and international students in terms of their attitudes toward learning motivation, learning anxiety, and learning achievement. Due to the multiple use of t-test, the Bonferroni procedure was performed to adjust the alpha level from α = .05 to α = .016 to test the null hypothesis. As shown in Table 5, the local and foreign students were found to statistically differ in all three constructs. In terms of learning motivation, the mean was significantly lower for the local students than for the foreign students (t = -0.71, p< .000), and in learning achievement, the mean was also significantly lower for the local students than for the foreign students (t = -5.845, p < .000); however, for learning anxiety, the local students were found to have a higher mean than the foreign students (t = 0.75, p = < .000). In contrast with the local students, the foreign students therefore reported lower learning anxiety and higher self-confidence in EMI courses.

Table 5.Results of independent-samples *t*-tests

Constructs	Group	Mean	*t*	*p*-value(2-tailed)
Learning Motivation	1[1]	3.88	-0.71	0.000
	2	4.59		

Learning Anxiety	1	4.11	0.75	0.000
	2	3.36		
Learning Achievement	1	3.85	-5.845	0.000
	2	4.80		

[1]1 = local students; 2 = foreign students

Results of the interviews with eight students can be summarized as follows. From the students' perspectives, they tended to be more concerned about how the teaching approaches, the delivery skills in English, and the preparation of course materials can better be managed to generate more effective learning. So it was recommended by one of the interviewees, for example, that bilingual English for Specific Purposes (ESP)vocabulary be provided to help better understand content knowledge. It was also requested by some of the interviewees that the instructor use Chinese translation to assist in EMI course teaching whenever appropriate. Other expectations from the student interviewees include: (1) there bemore EMI courses to choose from, (2) instructors use various explanation approaches to help students better comprehend the learning points, (3) teachers should do something to motivate students and make classes more interesting and comfortable, and (4) there should be more practice exercises.Aside from the preceding requests or expectations from EMI courses, students tended to agree that EMI courses enhance English ability, contribute to cross-cultural interaction and understanding, and that English comprehension ability is crucial to the learning success of professional knowledge.

The opened-ended questions included in the questionnaire aimed to elicit additionalcomments and suggestions regarding EMI courses from the participants. The participants' responses to the two open-ended questions were compiled, analyzed, and summarized as the following top ten comments or suggestions:

- EMI courses are useful and helpful.
- EMI classesgive students the chance toimprove their English proficiency.
- The school should select qualified professors to teach for the EMI program. (voiced by foreign students)
- The major difficultiesand anxiety come from low English proficiency.
- Teachers should give more examples when teaching and should usesome Chinese.
- Different EMI courses should be offered based on students'English levels to ease their learning pressure. (voiced by local students)
- A multinational class can promote learning motivation.
- EMI coursesare more appropriate for graduate studentsthan for undergraduate students.
- EMI courses help students develop presentation skills.
- Courses involving learning very high-level professional knowledge are not suitable to be conducted entirely in English.

4. Conclusion

This study surveyed the students' attitudes toward EMI courses of the university. Employing a questionnaire (QSPEMI) as the primary research instrument along with the qualitative interviews and open-ended questions included in the questionnaire for triangulation purposes, the study was aimed at understanding the students' responses to the questionnaire, exploring the association among the constructs of learning motivation, learning anxiety and learning achievement with respect to EMI courses, and determining if local and foreign students differ significantly in their attitudes toward the three constructs.Quantitative analysis measures including descriptive statistics, Pearson correlation, and independent-samples *t*-tests were performed to aid in interpreting the responses to QSPEMI. In addition, the qualitative analysis of the interviews and responses to the open-ended questionswere analyzed in connection to the QSPEMI to answer three research questions. The major findings in response to the research questions are summarized as follows:

First, the participants were found to have a moderate level of learning motivation for EMI courses, and they were best motivated to interact with students of different nationalities in EMI classes. In regards to learning anxiety, the participants were found to have the highest degree of anxiety resulting from learning difficulties self-perceived as being linked to low English ability. As for learning achievement, the habit of reading authentic learning materials in EMI courses was considered especially beneficial.

When it comes to the relationship among the three constructs, Anxiety was found to negatively correlate with Achievement, with self-perceived English ability playing a crucial role in the participants' perception.

Local and foreign students, moreover, differed significantly in the measures of the three constructs, the former found to have higher learning anxiety, but lower motivation and achievement than the latter. Due to their self-perceived English proficiency, local students tended to indicate learning difficulties and hence felt stress from the content comprehension as well as from peer competition.

The findings of this study allows for pedagogical implications for EMI courses in Taiwan. To begin with, it becomes a top task for EMI teachers to lower learning anxiety of local students by taking students' English abilities into account. Using effective strategies to facilitate comprehension by students with low-levels of English would considerably lower their anxiety and inspire in them more confidence and motivation. Appropriate creation of interaction between local and foreign students in class would also trigger learning motivation and enable those encountering learning difficulties to seek timely help from classmates or teachers. Equally crucial to the learning quality of EMI courses seems to be the teaching quality on the part of EMI teachers.

More importantly, for a better overall quality of student learning in EMI courses, universities should increase resources to support their students' English language learning. Both Hsieh and Kang (2007) and Wu (2006) suggested that EMI subject courses could be regarded as extra opportunities to improve the English proficiency of undergraduates. These courses provide students with more opportunities to learn English through receiving and producing English in real communicative contexts (Brandl, 2007; Swales, 1990).

Based on the findings and limitations of the present study, some suggestions for future research are in order. First, replication research is needed to investigate attitudes toward EMI courses of students from a wider range of study fields and from schools across different geographical areas of Taiwan. Second, exploration ofEMI students' affective and background variables and their association with learning achievement in EMI courses are warranted.Third, longitudinal investigations relevant to the process of English and content subject learning would also be a good approach for registering the changes of affective variables over a longer period of time than just several weeks.Fourth, qualitative interviews with as many students as possible can be conducted to acquire participants' first hand perspectives, and gather more details about EMI students' English learning motivation and learning anxiety. Lastly, quantitative and qualitative approaches to investigating perceptions of EMI courses from the perspectives of EMI teachers and school administrators are also necessary to achieve a balanced and valid understanding of the practices of EMI programs and the essential elements to their success.

Acknowledgements

This paper derives from the partial result of my research project supported by the grant of National Science Council, Taiwan (NSC101-2410-H-218-011). I am grateful to NSC for making possible the publication of this paper.

References

Airey, J. (2009). Estimating undergraduate bilingual scientific literacy in Sweden. *International CLIL Research Journal*, *1*(2), 26-46.

Alonso, E., Grisalena, J., & Campo, A. (2008). Plurilingual education in secondary schools: Analysis of results. *International CLIL Research Journal*, *1*(1), 36-49.

Chang, Y. Y. (2010). English-medium instruction for subject courses in tertiary
education: Reactions from Taiwanese undergraduate students. *Taiwan International ESP Journal, 2*(1):55-84.

Coyle, D. (2002). Relevance of CLIL to the European Commission's Language Learning Objectives in CLIL/EMILE: the European Dimension, *Public Services Contract DG EAC*, 27-28.

Dalton-Puffer, C., Huttner, J., Schindelegger, V., & Smit, U. (2009). Technology-Geeks speak out: What students think about vocational CLIL. *International CLIL Research Journal,1*(2), 18-25.

Darn, S. (2006). *Content and language integrated learning (CLIL): A European overview.* ERIC Education Resources Information Center.

Hsieh, S.-H., & Kang, S.-C. (2007). Effectiveness of English-medium instruction of an engineering course and strategies used by the teacher. Retrieved from <http://ctld.ntu.edu.tw/rp/95_01.pdf>.

Huang, Y. P. (2009). English-only instruction in post-secondary education in Taiwan: Voices From students. *Hwa Kang Journal of English Language & Literature, 15,* 145-157.

Huang, Y. P. (2012). Design and implementation of English-medium courses in higher education in Taiwan: A qualitative case study. *English Teaching & Learning, 36*(1), 1-51.

Hu, C. H., Chen, S. Y., & Lin, L. Z. (2008). University English as the medium of instruction up to 10%. *The Liberty Time:* Education News.

Infante, D., Benvenuto, G., & Lastrucci, E. (2008). Integrating content and language at primary school in Italy: Ongoing experimental research. *International CLIL Research Journal*, *1*(1), 74-82.

Krashen, S. D., & Terrell, T. D. (1983). *The natural approach: Language acquisition in the classroom.* San Francisco, CA: Alemany Press.

Lee, B. C., & Chang, K. S. (2008). An overview of content language integrated learning in Asian contexts. *Studies in English Education,13*(2), 166-184.

Lightbown, P. M., & Spada, N. (2006). *How Languages Are Learned*. Oxford: OxfordUniversity Press.

Liu, J. Y., Chang, Y. J., Yang, F. Y., & Sun, Y. C. (2011). Is what I need what I want?
Reconceptualising college students' needs in English courses for general and
specific/academic purposes. *Journal of English for Academic Purposes, 10*, 271-280.

Loranc-Paszylk, B. (2009). Integrating reading and writing into the context of CLIL classroom: Some practical solutions. *International CLIL Research Journal,1*(2), 47-53.

Mackenzie, A. S. (2008). English Next in Easy Asia. In British Council (Ed.), *The proceeding of primary innovations regional seminar* (pp. 23-30). Bangkok.

Marsh, D., & Hood.P. (2008). Content and language integrated learning in primary East Asia contexts (CLIL PEAC). In British Council (Ed.), *The proceeding of primary innovations regional seminar* (pp. 43-50). Bangkok.

Sasajima, S., Ikeda, M., Hemme, C., & Reiley, T. (2011). Current practice and future perspectives of content and language integrated learning (CLIL) in Japan. *The JACET 50th (2011) Commemorative International Convention Proceedings*. Tokyo: JACET.

Teng, S. C. (2009). *Teachers' beliefs about using English as the medium of instruction and their teaching techniques.* Master's thesis, Ming Chuan University, Taipei, Taiwan.

Wu, W. S. (2006). Students' attitudes toward EMI: Using Chung Hua University as an example. *Journal of Education and Foreign Language and Literature, 4*, 67-84.

Zarobe, Y. R. (2008). CLIL and foreign language learning: A longitudinal study in the Basque country. *International CLIL Research Journal*, *1*(1), 60-72.