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Success in English Medium Instruction in China: Significant Indicators and Implications

Abstract

This article reports a mixed-methods study that investigates academic success in English Medium Instruction (EMI) at a Chinese state university. Questionnaire, exam score ($n=100$), and semi-structured interview data ($n=29$) was collected from second-year undergraduate students majoring in Business Management. Content-related language proficiency, perceived success, and motivation were explored as possible significant predictors of academic success in EMI. Business English proficiency was a statistically significant predictor, highlighting that students with a lower level of proficiency need supplementary linguistic support in order to fully succeed in their EMI studies. Language learning motivation did not predict academic success, echoing previous findings (Rose et al., 2019). *Perceived success* in EMI did predict *actual success* in EMI, highlighting the need to enhance students' perceptions of their own ability to succeed in EMI. Qualitative data revealed that students' perceptions of success in EMI centred around content knowledge acquisition, improved English proficiency, knowledge application and transformation, and forming new modes of thinking. Practical implications for pedagogy are discussed.

Key words: English medium instruction (EMI); Business English proficiency; Motivation; Perceptions of Success in EMI; English for Specific Purposes (ESP)

Introduction

Using English to teach and learn academic subjects in higher education (HE) across the globe is increasing in popularity (Wächter & Maiworm, 2014). Known as English medium instruction (EMI), this is defined here as '*the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English*' (Macaro, 2018:19). This booming phenomenon has numerous implications (both positive and negative) for teaching and learning. Various empirical studies have explored these implications (Macaro et al., 2018; Dearden, 2014), with a vast majority focusing on self-reported data (such as perceptions and challenges) in the European context. This study focuses on success in EMI (both actual and perceived), to what extent these two aspects correlate; as well as whether English proficiency and motivation play a role in this success. Exploring the under-researched EMI context of China, interview data then uncovers unique interpretations of success. Throughout this paper, particular emphasis

is put on providing practical implications for university lecturers to be able to support students to succeed in their EMI learning.

Background

The expansion of EMI across the globe

Over the past two decades, EMI has gained remarkable popularity globally across all levels of education, especially showing increasing growth at the tertiary level (Dearden, 2014; Macaro, 2018). This growth can be illustrated by the considerable number of empirical research studies on EMI, especially after 2005 (see Macaro et al., 2018). Globally, the majority of EMI studies have been conducted in European and Asian countries (Macaro, 2018), and numerous studies have explored issues concerning teachers' and/or students' attitudes, beliefs, and perceptions of EMI (Cho, 2012; Hu et al., 2014). Although many studies point out certain benefits and challenges perceived by teachers and students, there is very little evidence on what exactly affects success in EMI (Macaro et al., 2018). Drawing inspiration from Rose et al. (2019), this study explores various predictors of success in EMI. This study, however, makes an original contribution to knowledge in that it takes place in the Chinese tertiary education context, and explores slightly different variables (perceptions of success, and Business English Proficiency), not examined in previous studies. It also offers practical implications for university lecturers to help students thrive and succeed in their EMI studies.

EMI in China

The rapid growth of EMI is also happening in China (Gao & Ren, 2019). In the year 2000, the Ministry of Education (MOE) set out to introduce EMI in higher education with the ambition of enhancing its educational status and prestige (Hu et al., 2014; Wei & Su, 2015). Although EMI is relatively new in China compared to some European countries, the MOE has supported, encouraged and funded Chinese universities (especially those that are considered to be domestically highly prestigious) to offer more EMI courses/degrees (Hu & Li, 2017). At present, little is known about whether or to what extent European-based findings (including controversial findings about the effectiveness of EMI in terms of content acquisition and language learning, see Macaro, 2018) are similar in the Chinese context (also see Wang & Curdt-Christiansen, 2019). China differs extensively from European countries in terms of economic, social, cultural and historical educational development. This study therefore responds to a call by Lei and Hu (2014) and Hu and Duan (2019) for more research on EMI in diverse contexts, particularly in East Asia and China.

The Drive behind EMI

Due to the increasing growth and prevalence of the use of EMI across the world, numerous studies have investigated why and what makes EMI so popular, that is, factors that drive EMI (Wilkinson, 2012; Hu et al., 2014; Hu & Li, 2017). Wilkinson (2012) suggests that this popularity is due to multiple macro factors such as the economy, society, politics and education. The acceleration of this expansion has also been linked to globalisation, the incessant flow of resources, higher education's ambition of becoming international, and the growing international, dominant status of English (Macaro, 2018; Hu, 2019). Finally, the idea that EMI might enhance English proficiency while at the same time acquiring complex content knowledge, often comes with the promise of enhanced career prospects (Huang, 2011; Hu et al., 2014). These are factors all driving the expansion of EMI in higher

education. This study focuses on content learning outcomes in EMI (i.e. content knowledge acquisition), taken as a measure of success in EMI.

English language competence

With the increasing use of English in education, many researchers have investigated the interplay between English language proficiency and academic performance. This has been to discover whether English competence influences academic learning, particularly among international students (Cho & Bridgeman 2012; Oliver et al., 2012). It has been noted that students with a higher proficiency level of the instruction language (English) tend to be more successful in academic subjects in general (Light et al., 1987; Fakeye & Ogunsiyi 2009). Nevertheless, insufficient research has examined this relationship in EMI settings. In Rose et al. (2019), English language proficiency was a strong predictor of academic achievement in EMI. Accordingly, this study sets out to explore whether and to what extent this result applies to the Chinese higher education EMI context. This study focuses specifically on participants' Business English proficiency rather than their general English competence because academic English is more likely to be connected to successful EMI learning (Rose et al., 2019). Academic English competence has been shown to play a significant role in academic performance (Terrachke & Wahid, 2011). Donohue and Erling (2012) found a strong correlation between the use of English for academic purposes and academic achievement. Furthermore, Thompson et al. (2019) suggest that it may be better to measure subject-specific English competence to investigate the predictive influence of English proficiency on success in EMI. This study therefore aims to fill this gap in the literature.

Motivation

Apart from English proficiency, numerous research studies have examined language learning motivation in contexts where English is learned as a second/foreign language. Motivation has been shown to be a key factor in influencing learners' second/foreign language achievement and proficiency (Ortega, 2009). In a similar vein, motivation of English language learning may have an influence on students' academic success in EMI; however, there is a dearth of research on motivation in EMI contexts (Macaro et al., 2018). Numerous scholars call for further research into the interplay between motivation and academic performance in EMI settings (e.g. Macaro, 2018). This study therefore sets out to explore whether or to what extent learners' motivation predicts their academic performance in an EMI programme.

This study draws on a widely adopted theory of motivation in applied linguistics research, namely, the L2 Motivational Self System (see Dörnyei & Ryan, 2015). This framework consists of three dimensions; the Ideal L2 self, the Ought-to self, and L2 Learning experience. This study focuses on the Ideal L2 self; that is the ideal future image a learner has of becoming an L2 speaker. The Ideal L2 self has been singled out as this has been shown to have a significant influence on learners' motivation to learn and succeed in a second language (Dörnyei & Ryan, 2015). Additionally, in Lasagabaster's (2016) study of the Spanish EMI HE context, students' Ideal L2 self was a statistically significant predictor of their academic outcomes. Nevertheless, in Rose et al.'s (2019) study in the Japanese EMI context, no statistically significant correlation between Ideal L2 self and academic success was found. However, this was only found in the quantitative data, in the qualitative follow-up interview data, participants connected their academic success in EMI to language learning motivation. Motivation is therefore deemed worthy of investigation in this study to explore whether or not similar results might be revealed in the Chinese HE context.

Perceptions of success in EMI

Previous research studies from the wider field of education have shown that students' academic performance is influenced by their self-perceptions towards disciplinary knowledge acquisition. This is due to the fact that self-perceptions are likely to affect how much effort students invest in learning academic subject content (Montague & Garderen, 2003). For example, Shen and Tam (2008) found a positive relationship between participants' self-perceptions and their academic achievement in Mathematics and Science. This echoes findings of Skaalvik and Skaalvik (2009) but contradicts Ayotola and Adedeji (2009)'s results in which no significant relationship between the two components was found.

With regards to similar research in EMI contexts, a study conducted in a Chinese university by Tong and Shi (2012) indicated that students tended to achieve better learning outcomes in Science subjects if they held a positive attitude toward EMI. Similarly, Lei and Hu (2014) point out that participants' academic achievement in EMI was closely linked to their perceptions of the EMI programme itself. By contrast, students who were negative towards EMI thought that their academic achievement would likely to be undermined by EMI and preferred to study academic subjects through their mother tongue (also see Tsui & Ngo, 2017). Despite these studies that focused on students' perceptions, few empirical studies have directly measured and explored (quantitatively) how students perceive academic success in EMI. Although Rose et al. (2019) investigated (qualitatively) participants' perceptions of success in EMI in follow-up interviews, it did not explore or reveal the relationship between participants' perceived success in EMI and their academic success in EMI. Accordingly, this study aims to fill this gap by investigating whether and to what extent students' *perceived* success in EMI predict their *actual* academic success in EMI.

Research Design

The current study addressed the following research questions:

- (1) Does perceived success in EMI predict academic success in EMI?
- (2) Does English proficiency (Business English) predict academic success in EMI?
- (3) Does language learning motivation (ideal L2 self) predict academic success in EMI?
- (4) To what extent do perceptions of success in EMI, English proficiency (Business English) and motivation (ideal L2 self) predict academic success in EMI?
- (5) What are students' perceptions of success in EMI?

Context

In order to minimise the influence of context-related confounding variables (Vodopija-Krstanovic, 2016), a single case study was conducted at a state-owned university in the South of China. The EMI degree in focus was that of Business Management (BM) in the International Business Department. Various courses such as Introduction to Business, International Business Theory and Practice, and Business Finance on this degree are offered through EMI. Through a process of recruitment, BM students from the EMI Marketing course volunteered to partake in this study. This academic subject was chosen in order to generate findings from the Chinese context that might be comparable to the Japanese context as found in Rose et al. (2019).

Participants

From a total of 310, 106 sophomore university students (Year 2) majoring in Business Management volunteered to take part in this study. Of these, 29 volunteered for a follow-up interview.

- All participants had completed 2 full years of studying through EMI, ensuring that they all had an equal amount of EMI experience from which to reflect on.
- All participants were Chinese students and spoke English as a second language. They also had similar formal English language learning experiences within the Chinese education system.
- All participants took both the EMI Management content course and the Business English Proficiency (an English for Specific Purposes ESP-type) course, taught by the same lecturers. This ensured consistent learning experience, eliminating a possible teacher effect (see Mårtensson & Bild, 2016).
- All participants had taken the same assessments, at the same time; mitigating any testing effect on the scores used in this analysis.

Throughout this discussion pseudonyms are used. The limitations of this sample are twofold. Firstly, students' Business English proficiency scores ranged from 72% to 94%; which may be considered to be relatively good. Secondly, the means of sample access; convenience sampling was used, a non-probability sampling strategy, limiting the extensive generalisability of this study (Dörnyei, 2007).

Data Collection

A mixed-methods survey approach (Creswell & Clark, 2017) was taken in this study. Data was collected using the following research instruments and measures:

- A questionnaire ($n = 106$) which included:
 - demographic information
 - items related to perceptions of success in EMI
 - items related to language learning motivation
- End-of term content test scores for the 'Marketing' (MAR) course
- End-of-term test scores for the 'Business English Proficiency' course
- Interviews with a subgroup of students ($n = 29$)

All participants provided written informed consent to participate in this study. A pilot study was then conducted with a cohort of similar characteristics ($n = 11$). Piloting of the semi-structured interview protocol revealed no necessary changes to questions (Appendix A). Piloting of the questionnaire resulted in the addition of an item to the scale of 'perceived success in EMI' related to the improvement of English proficiency. All questionnaire items were responded to on a Likert scale of 1-6 (i.e. 1 = Strongly agree and 6 = Strongly disagree). Students completed questionnaires at the end of the academic year. Interviews were conducted soon thereafter. All data was collected in the participants' first language, Mandarin Chinese.

'Perceived Success in EMI' was measured by taking the total score of three questionnaire items as created for this study (see Appendix B). The higher students scored on these items, the more successful they viewed their learning through EMI. A reliability

analysis of these items reached an acceptable level, $\alpha = 0.77$. All items were therefore retained.

‘Motivation’ (focusing on the Ideal L2 Self) was measured by taking the total score of four (already validated) items adapted from Iwaniec (2014; see Appendix C), the same items as used in a previous study on success in EMI (Rose et al., 2019). The higher students scored on these items, the higher their motivation.

‘Success’ in EMI learning was measured using the final, end-of-year content test score. This served as a measure of content knowledge acquisition of Business Management, specifically, Marketing. Limitations of such a measure are recognised, however, in Rose et al. (2019) EMI students reported that getting high grades in their content courses formed part of their characterisation of ‘success’ in EMI. Additionally, as this score served as students’ final grades for this course as assessed by the EMI lecturer, it was deemed to be a robust measure of how successful a student had been in this EMI course (i.e. how much content had been mastered). Lastly, interview data shed further light on the multifaceted of success in EMI.

‘Business English proficiency’ was measured by taking an average of students’ end-of-term test scores for: Business English listening, Business English speaking, Business English reading, and Business English writing. These tests assessed a student’s ability to comprehend and communicate in English (specifically in a business context), reflecting their Business English competence. The nature of this course could be considered to be an ‘English for Specific Purposes’ (ESP) course that supports students in developing their academic skills and English proficiency specifically for business.

Data Analysis

Questionnaire data was analysed in R. Descriptive statistics were generated for all variables. Due to missing data the sample size was reduced from 106 to 100. Simple linear regression was used to investigate the relationship between academic success in EMI and perceived success in EMI (RQ1), Business English proficiency (RQ2), and motivation (RQ3). All variables were subsequently modelled together using multiple regression (RQ4).

Interview data was then analysed in NVivo to reveal students’ perceptions of success in EMI (RQ5). All 29 interviews were transcribed and translated by the first author (a native Mandarin Chinese speaker). In order to determine the patterns (i.e. themes) in the interview data, interview transcripts were analysed taking a content analysis approach (see Creswell & Clark, 2017). By finding the salient patterns in the data, a vast body of data was transformed into a smaller number of units (themes) that were suitable for further analysis (Miles & Huberman, 1994). Five salient themes relating to students’ perceptions of success in EMI emerged in this interview data. Reliability of coding was checked. Inter-rater reliability was high ($k = 0.85$. Miles & Huberman, 2014).

Results

Does perceived success in EMI predict academic success in EMI?

To answer the first research question, simple linear regression was used to explore the variance in content scores (academic success) in relation to the sum value of the *perceived success in EMI* items (the lower the score, the more successful students perceived themselves to be in EMI). Descriptive statistics in Table 1 show that the highest sum value was 13 and the lowest 3; a range of 10 with a mean of 7.62 and SD of 2.05. The skewness was 0.21 and

kurtosis was 0.39, falling within +1 to -1, an acceptable range (Hair et al., 2010). No outliers existed, and the data met all the assumptions for linear regression.

Table 1. Descriptive statistics of all variables

Variable	N	Mean	SD	Median	Min	Max	Range	Skew	Kurtosis
Perceived success in EMI	100	7.62	2.05	7.5	3	13	10	0.21	0.39
Business English Proficiency Score	100	83.35	4.33	84	72	94	22	-0.22	-0.48
Motivation	100	10.01	3.72	10.0	4	20	16	0.28	-0.30
Content Score	100	80.75	5.55	81.0	68	93	25	-0.13	-0.32

As shown in Table 2, it is clear that there was a statistically significant relationship between participants' academic success in EMI and their perceived success in EMI ($F(1,98)=4.32$, $p=0.0403$). Content scores increased by 0.56 for every point decrease in perceived EMI success scores. The R^2 indicated that 4.22% of the variance in content scores could be explained by perceived success in EMI. The standardised Beta was -0.21 which demonstrates that content scores decreased by 0.21 standard deviations for every one standard deviation increase in perceived success in EMI. To conclude, participants' perceived success in EMI statistically significantly predicted their academic success in EMI.

Table 2. Linear regression output: Perceptions of success in EMI and Content Scores

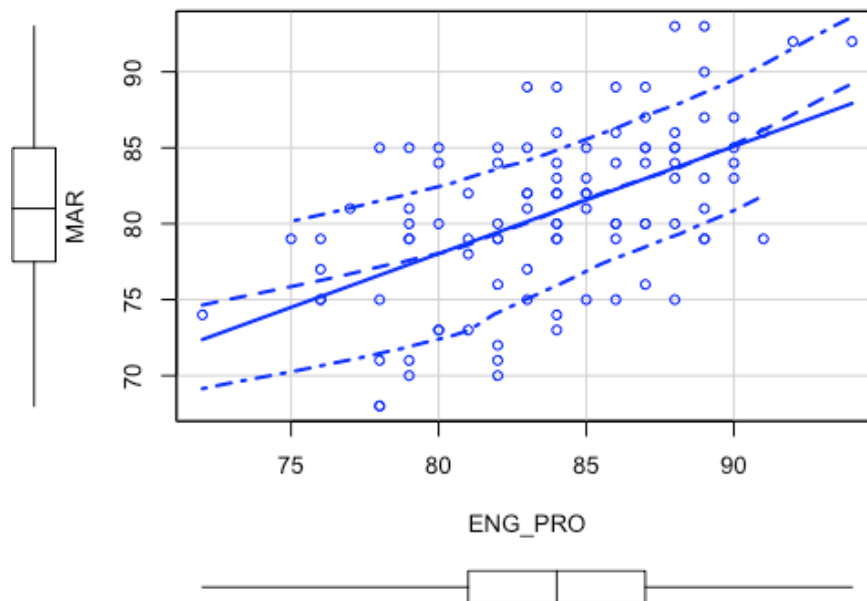
	ΔR^2	B	Standardised β	F value	r	t value	p value
Constant	0.0422	84.99				40.20	<0.001
Perceived success in EMI		-0.56	-0.21	4.32	-0.21	-2.08	0.0403

Does English proficiency (Business English) predict academic success in EMI?

In order to answer research question two, simple linear regression was again carried out to investigate the relationship between Business English proficiency grades and content (Marketing) scores. Descriptive statistics (see Table 1) indicated that there was relatively more variance in content scores (mean=80.75, SD=5.55, range=25) than in Business English proficiency scores (mean=83.85, SD=4.33, range=22). However, neither of the two showed obvious skewness or kurtosis, with both of them falling within an acceptable range. In addition, no significant outliers were found, residuals were approximately normally distributed, and all other assumptions of linear regression were met.

The scatterplot in Figure 1 indicates a positive correlation between content scores and Business English proficiency scores. Accordingly, an increase in content scores (Marketing) reflected an increase in Business English proficiency.

Figure 1. Scatterplot of content scores and Business English proficiency grades



Simple linear regression showed a statistically significant relationship between students' Business English proficiency and their content scores ($F(1,98)=42.72$, $p = 0.000$). Table 3 shows participants' content scores increased by 0.71 for every point increase in Business English proficiency scores. The R^2 showed that 30.36% of the variance in content scores could be explained by Business English proficiency. The standardised Beta ($\beta=0.55$) echoed these findings; content scores rose by 0.55 standard deviations for every one-standard deviation increase in Business English proficiency grades ($SD=4.33$). Therefore, Business English proficiency scores statistically significantly predicted success in EMI.

Table 3. Linear regression output: Business English proficiency scores and Content Scores

	ΔR^2	B	Standardised β	F value	r	t value	p value
Constant	0.3036	21.4894				2.367	0.0199
Business English Proficiency		0.7067	0.55	42.72	0.55	6.536	0.00000000285

Does language learning motivation (ideal L2 self) predict academic success in EMI?

The relationship between motivation (ideal L2 self) and success in EMI was explored in order to answer the third research question. Again, a linear regression model was used to investigate the variance in content scores in relation to the sum value of the *Ideal L2 self* motivation questionnaire items (the lower the score, the more motivated students were).

Descriptive statistics (refer back to Table 1) showed a wide range in motivation scores (from 4 to 20), with a mean of 10.01 and $SD=3.72$. Similar to previous models, there were no outliers, with acceptable skewness (0.28) and kurtosis (-0.3). The data met all assumptions for regression.

The correlation (r) between these two variables was -0.17 (see Table 4), meaning that as one variable increased, the other decreased. In other words, the more motivated students were (i.e. a low motivation score), the more successful they tended to be in content learning (i.e. a high content score). Nevertheless, no statistically significant relationship was found between

these two variables ($F(1,98) = 2.944, p = 0.0894$). Table 4 also shows the R^2 to be 0.0292, that is 2.92% of the variance in content scores was explained by a model containing motivation only. Hence, motivation (as measured by the *Ideal L2 Self*) was not a statistically significant predictor of success in EMI.

Table 4. Linear regression output: Motivation (*Ideal L2 self*) and Content Scores

	ΔR^2	<i>B</i>	<i>Standardised β</i>	<i>F value</i>	<i>r</i>	<i>t value</i>	<i>p value</i>
Constant	0.0292	83.2999				52.567	<0.001
Motivation		-0.2547	-0.17	2.944	-0.17	-1.716	0.0894

To what extent do perceptions of success in EMI, English proficiency (Business English) and motivation (ideal L2 self) predict academic success in EMI?

The fourth research question was addressed by running a multiple regression model that contained all predictor variables (i.e. perceived success in EMI, Business English proficiency scores, and ideal L2 self) to explore the variance in content scores (i.e. the outcome variable). All assumptions were met. The R^2 value was 0.3103 which showed 31.03% of the variance in content scores was explained by the three predictor variables combined (see Table 5). Table 5 also shows that content scores increased by 0.03 for every point increase in perceived success in EMI; increased by 0.76 for every point increase in Business English proficiency; and increased by 0.13 for every point increase in motivation. To summarise, when all predictor variables were taken into account, neither perceived success in EMI nor motivation were significant predictors of academic success in EMI, however, Business English proficiency *did* statistically significantly predict academic success in EMI.

Table 5. Multiple regression output: Perceived success in EMI, Business English proficiency, Motivation and Content Scores

	ΔR^2	<i>B</i>	<i>Standardised β</i>	<i>t value</i>	<i>p value</i>
Constant	0.3103	15.32		1.309	0.194
Perceived success in EMI		0.03	0.01	0.119	0.906
Business English Proficiency		0.76	0.59	6.054	0.0000000273
Motivation		0.13	0.08	0.806	0.422

What are students' perceptions of success in EMI?

The above questionnaire data analysis operationalised 'academic success' in EMI as a score on a Marketing (content) course, and 'perceived success' in EMI was measured using three highly reliable questionnaire items. To answer research question 5, the qualitative interview data was analysed in order to directly uncover students' views of 'success in EMI'. Themes that arose included: (1) content knowledge acquisition; (2) English proficiency improvement; (3) knowledge application and transformation; and (4) new modes of thinking.

The vast majority of participants (23 out of 29) mentioned that success in EMI meant that they could comprehend what teachers taught in EMI courses, and thus acquire the relevant content knowledge therein, as illustrated by the following interview excerpt:

'I think success in EMI means that I could acquire content knowledge no matter which kind of language is used, which I think it matters most'
(Student Wang, Content score=89, Proficiency score=84%).

In addition, participants also connected success in EMI to their English language proficiency, mentioned 18 times. For example, one participant answered '*... success in EMI also means that English could be improved, which is less important than the first one*' (referring to content knowledge acquisition) - Student Xiao, Content score=81, Proficiency score=76%. However, one participant argued that improvement in English proficiency did not mean success in EMI: '*I don't think improvement in English should be the aim or success of EMI*' (Student Zhang, Content score=68, Proficiency score=74%).

A further seven participants referred to success in EMI as the capacity to put what they had learned into practical use, that is, knowledge application and transformation. Student Yang (Content score=87, Proficiency score=93%) said:

'Additionally, I think success in EMI means the ability to apply what I have acquired in classes to practice. For example, when doing presentation or taking part in competitions, it is important to use knowledge in an effective way.'

The last theme that emerged from the interview data was that of cultivating new modes of thinking as a form of success in EMI. Student Xieh (Content score=78, Proficiency score=82%) said:

'...success also means adjusting a different language, thinking in English. We have learned cultures of different countries. Chinese culture is different from other country's culture. You will learn to think differently when you study something through another language.'

Finally, although not a widespread theme, students made insightful comments worth reporting. A few students linked success in EMI to having effective communication with peers and teachers, having access to first-hand academic resources, gaining good exam results, learning something new on one's own, and competitive employability (one of the driving forces behind EMI, see Macaro, 2018). Remarkably, students did not mention anything related to language learning motivation, highlighting the need for further research in this domain.

Discussion and Implications

Perception of Success

A simple linear regression model revealed Perceived Success in EMI as a statistically significant predictor of Success in EMI. This finding is also in line with empirical research in the wider education literature; the more successful participants perceived themselves to be in learning subjects such as Mathematics and Science, the greater the achievement gains in those subjects (see Skaalvik & Skaalvik, 2009; Shen & Tam, 2008; Habibah et al., 2009; Yusuf, 2011). This sheds new light on the factors that predict success in EMI.

Nevertheless, a more complex statistical model of a multiple regression (which included all three predictors: Perceived Success, Motivation and Business English

Proficiency) showed Perceived Success to no longer be a significant predictor of Success. Closer examination of the model result reveals that the standardised beta value for Business English Proficiency ($\beta=0.59$) was 59 times larger than that of Perceived Success ($\beta=0.01$). This highlights the significant influence Business English Proficiency has on Business Management content scores. This result is in line with Rose et al.'s (2019:9) study that also found that English proficiency-related variables were the most predictive of success in EMI. Such similar findings across these two very different contexts highlights a need for more English language support for students studying through EMI; a suggestion also made by Hu, Li and Lei in 2014.

Qualitative data findings showed that students perceived 'success' in EMI as content knowledge acquisition, echoing Rose et al.'s. (2019) findings in Japan. This highlights a shared understanding across EMI contexts that in order for EMI to be considered successful, content knowledge should be well acquired. This could be considered to be in contradiction with the notion of EMI 'killing two birds with one stone', i.e. enhancing English proficiency *and* acquiring content knowledge (see Hu, 2019). Students in both contexts tended to emphasise the acquisition of content knowledge over improving their English proficiency. This finding is key to guiding EMI teaching and learning practices. One way to enhance content acquisition may be to facilitate lecture comprehension. A starting point for this may be to explicitly teach students listening comprehension strategies such as taking notes (of keywords, or paraphrasing content in one's own words in order to recall meaning; Fung & Macaro, 2019) or even practising techniques such as visualisation (see Soruç & Griffiths, 2017). This could provide students with the skills to take control of their own learning.

Another interpretation of 'success', unique to this study, was the ability to put into practical use what had been taught in EMI classes. A further implication for lecturers could therefore be to explicitly demonstrate to students how theoretical, abstract academic concepts might be used in practice; drawing together theory and practice.

Business English Proficiency

Besides students' perceived success, their Business English proficiency grades predicted their academic success in EMI. This resonates with Li's (2018) finding in another Chinese tertiary context where students' English competence was the strongest predictor of their academic outcomes in Social Science majors. It is also consistent with Rose et al.'s. (2019) study in the Japanese EMI context where English proficiency (operationalised by TOEIC and ESP scores) predicted students' EMI academic success. One pedagogical implication of this finding could be to augment and support student achievement in Business English competence. When drawing on teaching materials such as business texts (e.g. a company report), lecturers could practise Reciprocal Teaching (Palincsar & Brown, 1988). This increases learner language practice, as well as transforms content learning into a problem-solving activity over which students have great autonomy (see Malik & Aswandi, 2019 for a worked example in Bengkalis).

Motivation

In the field of second language acquisition (SLA), the motivational aspect of *Ideal L2 Self* tends to be a strong predictor of success in language learning (Taguchi, Magid, & Papi, 2009). In this study, however, no statistically significant association between students' motivation and academic success in EMI was found. This is similar to Rose et al.'s. (2019) study. A plausible explanation for this is that motivation plays a salient role in influencing learners' language proficiency attainment, which in turn may affect their content learning through EMI (Saville-Troike & Barto, 2006). Another reason for non-significance may be; both studies attempted to 'transplant' a theory of SLA to the EMI context where the learning

objective is *content knowledge acquisition* and not *language acquisition* (Macaro, 2019:12). Future research should therefore focus on theory development related specifically to the EMI context.

Conclusion

The main finding of this study reinforced previous results (Rose et al., 2019) that English proficiency-related variables are the strongest predictors of success in EMI. However, we argue that limitations exist in how these variables were measured. Rather than relying on standardised proficiency measures such as IELTS, TOEIC or ESP-related assessments, it is recommended that future research takes a more tailored approach in this respect. Various measures of proficiency in relation to the linguistic demands of an EMI programme should be measured, that is, taking a customised approach to the EMI programme in focus. For example, writing skills could be measured as the production of a domain-specific text, using terminology as required in that particular EMI academic subject. Such a bespoke proficiency measure would reflect more accurately students' proficiency with regard to the EMI course under study, and therefore (possibly) their level of success in that EMI subject. Future studies might also adopt a longitudinal approach with regards to how change in proficiency over time might affect success in EMI.

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Appendix A

Semi-structured Interview Protocol

- 1a. When I say ‘teaching and learning successfully in EMI’ – what does that mean to you?
- 1b. Can you give me an example from your own experience?
2. Do you think you perform well in EMI courses? Why/why not?
3. Do you think your learning of content through EMI courses is successful? Why/why not?
4. Do you think your English has improved by studying through EMI? Why/why not?

Appendix B

Perceived Success items

- I perform well in EMI courses.
- My learning of content through EMI is successful.
- My English has improved by studying through EMI.

Appendix C

‘Ideal L2 self’ items (adapted from (Iwaniec, 2014))

- I imagine myself comfortably reading books and articles in English.
- I imagine myself writing in English with ease.
- I imagine myself speaking English fluently.
- I imagine myself easily being able to follow what others myself easily being able to follow what others say to me in English.