



Constructing English Medium Instruction indicators in the shipping courses of Taiwan's higher education

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Abstract

Purpose

This paper uses an AHP (Analytic Hierarchy Process) and combines this with fuzzy theory to identify key indicators influencing English Medium Instruction (EMI) in the shipping courses of Taiwan's Higher Education.

Design/methodology/approach

Based on a literature review and expert interviews, an evaluation model with four indicators and thirteen sub-indicators was developed. Questionnaire samples included university English teachers (8), university shipping teachers (9), and shipping practitioners (8).

Findings

Using 25 effective samples, the results found that 'teachers' characteristics' is the most important indicator, followed by 'syllabus design', 'university resources', and 'students' characteristics'. Such a finding could provide valuable teaching and managerial strategies for EMI design in both the university and industry sectors.

Research limitations/implications

Expert questionnaire targets have focused on university English teachers, university shipping teachers, and shipping practitioners. Other related field experts could be further surveyed and compared in the future studies.

Practical implications

The findings of EMI indicators in the shipping courses could be used for course and material design by shipping companies, shipping authorities, and universities. It is expected these indicators could inform the provision of reasonable teaching resources allocation.

Social implications

This paper provides important guidance for designing EMI in shipping courses. Related stakeholders will be able to understand important concepts regarding designing EMI courses.

Originality/value

Firstly, EMI indicators in the shipping courses have seldom been studied in the past.

They are, however, important for both shipping industries and education intuitions.

Secondly, as its method this paper adopts decision analysis quantitative tool to complement previous qualitative studies regarding EMI studies.

English is a common language in the global shipping industry and many universities in non-speaking countries in the world are now moving towards the use of English as a Medium of Instruction (EMI) to deliver their courses. Such a medium increases students' proficiency in the common language used and also allows institutions to recruit students from different parts of the world. Yet, delivering such instruction using EMI is not without its challenges. This paper uses an AHP (Analytic Hierarchy Process) and combines this with fuzzy theory to identify key indicators influencing EMI in the shipping courses of Taiwan's higher education. Based on a literature review and expert interviews, an evaluation model with four indicators and thirteen sub-indicators was developed. Questionnaire samples included three groups: university English teachers (8), university shipping teachers (9), and shipping practitioners (8). Using 25 effective samples, the results found that teachers' characteristics is the most important indicator, followed by syllabus design, university resources, and students' characteristics. Results also provide valuable teaching and managerial strategies (e.g. curriculum adjustment) for EMI design in the university and industry sectors.

Keywords: English Medium Instruction, Shipping, Courses

1. Introduction

Taiwan, located in the Asia-Pacific region (between the southwest of Japan and the north of the Philippines), is an island of approximately 36,193 square kilometers (with a total population of approximately around 23 million). Over 90% of international trade cargoes, (in terms of volume) in Taiwan, are carried by shipping.¹ Understandably therefore, sShipping development and education have historically always occupied a central and key position laee in the university education in Taiwan. For those students who go on to work in the shipping industry, it is essential they have a strong command of the English language (Pallis and Ng, 2011), as this is the medium in which communication is most commonly undertaken in the shipping industry. However, in Taiwan, Chinese is the first language and English is a second or other language, and there is thus a perennial challenge faced by students and lecturers in developing students' English for the shipping industry. One approach to help address this challenge is to deliver

¹ Ministry of Transportation and Communication, Taiwan.
<http://www.motc.gov.tw/en/home.jsp?id=154&parentpath=0>

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4 university education about shipping in English. in Taiwan. Yet, a
5 Although the need to
6 introduc~~ing~~ English learning into the Taiwanese education system has been conducted and
7 emphasised for decades,² there are actual implementation and introduction of such approaches
8 is still in the early stages of development~~continual attempts to improve English learning~~. For
9 Taiwanese universities, the purposes of introducing English Medium Instruction (EMI) courses
10 are to (1) improve students' English abilities and strengthen international mobility and
11 employability, and (2) attract more international students to attend such courses. However, there
12 remain a number of implementation barriers and challenges caused by a range of factors such
13 as the learning environment, culture, learning skills, curriculum design, and the prevalence of
14 an exam-based learning approach.
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20 In the shipping industry, qualified shipping practitioners (e.g. seafarers, staff in shipping
21 companies, shipping forwarders, shipping agents, ship-broker, port authorities, etc.) must have
22 'good' English abilities (including listening, speaking, reading, writing) (Pallis and Ng, 2011).
23 Therefore, high proficiency in English is a prerequisite for employment in the shipping industry.
24 In Taiwan, there are around 12 universities that provide shipping management related courses,
25 and these. Shipping courses in shipping management related departments can be categorised
26 into foundation courses and specialist courses. Generally, the former include introductory type
27 courses such as 'introduction to maritime management or shipping management', 'introduction
28 to trade and shipping', and 'introduction to shipping and logistics. The latter covers topics such
29 as 'liner shipping management', 'bulk shipping management', 'port planning and management',
30 'shipping economics', 'maritime insurance', 'maritime law', 'shipping finance', 'management
31 of maritime organisations', 'shipbroker and chartering management', 'shipping and the
32 environment', and also 'maritime technology'. The main language of instruction for the
33 majority of these courses continues to be Chinese. Yet, the main language of international
34 shipping operation and management and any shipping information communication (e.g.
35 information announcement in international maritime organisation) is English. Therefore, there
36 are many advantages ~~is arguably a need~~ to add English education in the form of EMI in
37 Taiwanese shipping management related courses in order to link international shipping
38 transport related industries (including insurance, law, international trade, etc.), international
39 education system and other stakeholders (e.g. research organisation, governmental units, etc.).
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51 Introducing EMI in university courses has increased in recent years in East Asia in general
52 (Kedzierski, 2016) and for shipping related courses in Taiwan (Hu et al., 2008); ~~Kedzierski,~~
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56 ² For example, when a student graduates from senior high school (at about 18 years old) in Taiwan,
57 they have learnt English for 6 years, if it is ~~assumed~~ing their junior high school has had some form of
58 English education. In recent years, most public elementary schools in Taiwan have started English
59 language education classes when students are ten-years old. Also, some private elementary schools
60 have started to introduce English education or bilingual Education (Chinese and English).

2016).— However, ~~the~~ introducing ~~tion process~~ and implementing ~~ingation of~~ EMI teaching— has been accompanied by ~~resulted in~~ a number of issues. These can be broadly categorized ~~summarised~~ as (1) students often lack sufficient vocabulary and ~~have~~ difficulty ~~cannot~~ fluently expressing ~~ing~~ their academic ~~thinkingr feelings or thinking~~, (2) ~~inappropriate~~ course material ~~can be unsuitable~~ (e.g. students have difficulty in learning ~~all~~ using English ~~medium~~ material due to their ~~limited~~ English ability), (3) Chinese and English language is used interchangeably in texts ~~and language are mixed~~, and (4) ~~there are~~ significant differences ~~in of~~ students' levels of English ~~in a class~~, and teachers ~~find it difficult to~~ ~~an not~~ adopt a uniform standard in any course assessments (e.g. IELTS (Pilcher and Richards, 2017)). Arguably, such issues affect ~~both~~ students' learning motivation (~~Kedzierski, 2016~~) and ~~also~~ teachers' teaching performances (Poon, 2013).

In addition, ~~subject delivery~~ ~~There are in addition a number of other key issues~~ in EMI ~~presents~~ other issues. ~~These can be i~~ Issues such as how the subject operates when delivered in 'English', and what exactly 'English' is ~~defined to be~~ ~~key areas here~~ (Richards and Pilcher, 2014; Pilcher and Richards, 2016). ~~Further, some countries, such as Malaysia, attempted to introduce EMI but then returned to using Bahasa after the project did not meet expectations (Gooch, 2009).~~ In terms of the continually shifting nature of the ~~shipping~~ industry and how academia responds, some research notes the onus to be on the higher education institutions to keep abreast of the latest developments in the industry and to ensure their courses are up to date (Ng et al., 2009). Another issue to explore would be where shipping education training is situated in terms of whether it is situated in a business school or an engineering school, or whether it is standalone (Ng and Yip, 2009). Also, what such a position means for the accreditations it needs (Ng and Yip, 2009). Such issues help give a greater context to current understanding of EMI and are explored in this paper. Although it has been rightly noted in the literature that “a global labour market cannot be regulated by a national policy” (Gekara, 2009, pp.229), it is useful to research and reflect on national policies toward shipping education, especially as it is expected that international guidelines are adhered to and taught in shipping education training (Ng and Yip, 2009).

In terms of methods adopted to research ~~Previous studies in the~~ EMI ~~field~~, ~~previous studies have~~ ~~drawn on~~ ~~have used~~ a ~~wide~~ range of ~~methods~~. Many ~~of these~~ studies have been based on reviews of the literature (Hu et al., 2008; Ng and Yip, 2009; Horck, 2010; Mok and Yu, 2011), ~~or~~ on surveys (Pallis and Ng, 2011), ~~or~~ on questionnaires (Dinwoodie, 2000; Ng et al., 2009; Fei and Lu, 2015). ~~Notably, the approach to~~ ~~However,~~ analysis ~~ss methods~~ of these surveys in ~~the~~ past studies ~~has~~ mainly adopted a qualitative ~~approach~~ or ~~used only~~ basic descriptive statistics. ~~In this paper, i~~n order to ~~complement~~ ~~improve~~ this ~~previous~~ ~~analysis method of~~ EMI research, and obtain more insights into implications ~~for~~ the curriculum design and teaching strategies

in the university, a more in-depth and quantitative approach of a Fuzzy Analytic Hierarchy Process (AHP) is used ~~in this paper~~. This ~~analysis approach to analysis method~~ could help university teachers and related policy-makers to identify the most relevant indicators to develop their teaching strategies and allocate teaching resources ~~in the university~~.

The remainder of this paper is organised as follows. Section 2 briefly reviews the literature regarding the background and implementation of EMI. Section 3 presents the methodology, and the results are presented and analysed in Section 4. Finally, Section 5 provides discussions and conclusions, and also considers limitations and areas for future research.

2. Literature Review

2.1 EMI Related Studies

Much research has noted the changing face of education in the shipping industry (Demirel and Ziarati, 2013). Many countries are adopting moving toward EMI, and requiring asking lecturers to teach in English, for example, Italy (Costa and Coleman, 2013), Finland (Hahl et al., 2016), Korea (Kim et al., 2009; Kim et al., 2014; Lee, 2017), and China (Hu and Lei, 2014). In Taiwan, Huang (2015) used a self-assessment questionnaire to gather 157 student samples to explore student the perceptions of the ived effectiveness of EMI courses for Taiwanese students. Huang's findings were that Results found most students samples were motivated to take EMI courses to strengthen their English ability and professional knowledge. In Spain, Dafouz and Camacho-Miñano (2016), using 383 samples of student grades, used accounting as a case to explore the impact of EMI on university student academic achievement. Their r Results showed found no statistical differences across groups, and that the use of EMI did not lower student final academic outcomes. Further, Hellekjær (2009) used 578 Norwegian university students to study their academic English reading proficiency and to draw conclusions regarding the success of their previous English instruction at high school. Results showed found that about 30% of the sample had serious difficulties reading in English, while an additional 44% found it more difficult reading in English than reading in their first language. In another study, Kim et al. (2014), using 249 Koreans and 61 international students from non-English-speaking countries, found that English proficiency is of fundamental importance for success on EMI courses. Thus, EMI is a much-researched area, something which is entirely reflective of its increased use and prominence worldwide. Yet, the studies reviewed here highlight a number of challenges and key indicators for any research into EMI, which we now consider and expand on here, especially given that they were ones we used in our fuzzy AHP analysis.

2.2 Key Indicators Influencing EMI in the Shipping Courses

Drawing on ~~personal interviews with senior shipping practitioners³ and~~ previous studies (e.g. Dalton-Puffer, 2007; Hu, 2007; Pan, 2007; Hellekjær 2009; Kirkgöz, 2009; Byun et al., 2011; Evan and Morrison, 2011a; 2011b; Tong and Shi, 2012; Costa and Coleman, 2013; Poon, 2013; Başıbek et al., 2014; Goodman, 2014; Huang and Singh, 2014; Kim et al., 2014; Agai-Lochi, 2015; Clegg and Simpson, 2016; Dafouz and Camacho-Miñano, 2016), four indicators are described as follows.

2.2.1 Syllabus Design

Syllabus design ~~is here denoted to~~ relates to teaching strategies (e.g. material, textbook, assignments, examination, assessment process) used in the course content. ~~These are key; in helping which can guide~~ students ~~in~~ understanding ~~ing~~ how to learn the ~~teaching~~ subject ~~matters~~, provide effective learning guidelines, and improve levels of English. The content of syllabus design includes learning material, learning strategies and learning assessment (Costa and Coleman, 2013; Poon, 2013; Clegg and Simpson, 2016). In a shipping context, syllabus ~~design will include topics such as relate to~~ introduction to shipping market (including liner and bulk shipping), port operation and management, maritime logistics and networks, and so on. Teaching points ~~may would~~ differ depending on teachers' area of expertise and interests. Generally, in Taiwan, students have spent much time on reading about shipping, although listening, speaking, and writing may need to be further focused on. In terms of assessments, a term-project is also conducted in ~~many the~~ shipping related courses. Students are ~~in addition expected asked~~ to make a presentation at the end of the semester.

2.2.2 Students' Characteristics

~~The category of s~~Students' characteristics includes ~~students'~~ learning background, ~~their including~~ English level, shipping knowledge (e.g. understanding main components of shipping), and learning habits (e.g. course material preparation and review, and note taking skills) (Dalton-Puffer, 2007; Byun et al., 2011; ~~Evan and Morrison, 2011a; 2011b; Dalton-Puffer, 2007; Başıbek et al., 2014; Kim et al., 2014; Başıbek et al., 2014; Evan and Morrison, 2011a; 2011b~~). In terms of students' English knowledge and level, there are ~~many important~~

³ ~~We interviewed two directors who work for Evergreen Marine Corp. and two who work for Yang Mine Marine Transport in Taiwan. These two companies are the number one and number two shipping companies in Taiwan and their global rankings are 6 and 8 in September 2017, respectively (AlphaLiner, 2017). These two interviewees have more than 30 years' practical working experiences and have been continuously concerned with university education for a long time. Based on these background data, it is believed that these experts constitute effective interview samples. Expert interviews were conducted in December 2016. Interviews took place in interviewees' offices and used several questions (e.g. "What do you think about the English Medium Instruction in the shipping courses of Taiwan's higher education", "Do you have any improvement suggestions to enhance English Medium Instruction in the shipping courses of Taiwan's higher education", "Could you provide your comment or feedback about our initial questionnaire content") and questionnaire content as the focus for expert review. We further revised our questionnaire based on interviewees' comments and feedback, in terms of what aspects were considered common, core, and important. Each interview averaged 40 minutes in length.~~

~~components a range of items that could be key here.~~ Firstly, students' vocabulary will be essential. Importantly, rather than have a generic vocabulary here that may be useful for an admissions test of English such as the International English Language Testing System, or IELTS (Pilcher and Richards, 2017), what students will need ~~is will be~~ a vocabulary ~~that is~~ specific to shipping courses. Moreover, such ~~a~~ vocabulary will arguably be underpinned and be intertwined with key subject based elements specific to the shipping subject. In terms of their grammar, ~~although undoubtedly early this will be important essential, but~~ the level of grammar ~~required needed~~ might be different to that required in an admissions test if the subject takes primacy. Ultimately, students will need to have speaking and lexical ability, but ~~to~~ be able to demonstrate these within the subject. Analogously, if students are studying in the subject area of physics, they would need to be proficient in English in the field of physics (cf. Pilcher and Richards, 2016). Further, if students are studying a general admissions test on English such as IELTS they will need to be proficient in the English for this test, and not for shipping studies (Pilcher and Richards, 2017).

2.2.3 Teachers' Characteristics

Teachers' characteristics relates to teachers' background in terms of English level (including listening, speaking, reading, writing, etc.), ~~shipping~~ professional shipping knowledge (including related teaching subjects), and teachers' past experience of EMI teaching (Pan, 2007; Costa and Coleman, 2013; Goodman, 2014; Huang and Singh, 2014; Dafouz and Camacho-Miñano, 2016). As with the students' knowledge of English, in this case, the teachers' knowledge of English will need to be operational within the subject of shipping studies. Similarly, this may ~~involve be~~ a different range of vocabulary and knowledge to physics (cf. Pilcher and Richards, 2016), and be different to the English required for a more general test (Pilcher and Richards, 2017) or for conversation and small talk. In other words, teachers' knowledge of English is ~~closely very much~~ intertwined with their subject knowledge, and, provided they are proficient in their subject, this subject knowledge will take primacy over elements such as grammatical accuracy (Richards and Pilcher, 2017). ~~What thus, this means in practice is that~~ teachers' level of English ~~is may be~~ more than sufficient ~~if they can't~~ deliver their subject in a lecture, and ~~are they will be~~ able to answer questions at the end and during the lecture. ~~However, to have sufficient English to hold a fluent conversation about the weather at the end of the lecture may not be needed.~~

2.2.4 University Resources

The category of uUniversity resources includes useful learning and teaching resources provided by the university, ~~and. These resources also include possible potential incentives used~~ for students and teachers ~~with the aim of improving learning and teaching effectiveness. In this paper, as~~ in ~~Based on~~ past studies (Hu, 2007; Hellekjær 2009; Kirkgöz, 2009; Costa and Coleman, 2013;

Tong and Shi, 2012; Hellekjer 2009; Kirkgöz, 2009; Agai-Lochi, 2015; Hu, 2007; Tong and Shi, 2012), university resources include classroom facilities, availability of resources, incentives for teachers, and incentives for students. Resources could relate to ~~facilities~~ aspects such as translation tools, microphones, recorders and standard teaching related technology, ~~but also human resources such as~~ support staff ~~in the form of~~ ~~such as~~ academic advisors. Incentives for teachers could relate to aspects such as ~~opportunities to attend~~ overseas courses, salary increases, and favourable workload calculations. For students, incentives could relate ~~to~~, ~~for example~~, employability, ~~in~~ ~~and the fact~~ that they can add their experience to a curriculum vitae, ~~and it can help improve their attractiveness to employers.~~

~~After these four indicators and their sub-indicators~~ ~~we~~ ~~are~~ ~~developed~~, ~~face-to-face personal interviews with senior shipping practitioners~~⁴ ~~we~~ ~~are~~ ~~implemented~~ ~~to ensure the~~ ~~conducted~~ ~~content validity of the questionnaire.~~

3. Methodology

AHP is a multi-indicator decision making method and ~~is~~ used to solve complex problems (Saaty, 1980; Yang et al., 2014). However, classical AHP may not accurately represent the ~~ideas of the~~ decision makers' ~~ideas~~. ~~Consequently~~, Zadeh (1965) defined a fuzzy set as a class of objects with a continuum of grades of membership ranging between zero and one. Based on Zadeh (1965), fuzzy linguistic variables and corresponding fuzzy triangular numbers can be used for comparison among the elements included, and help solve vague and uncertain problems in decision-making. Therefore, fuzzy logic, using fuzzy pairwise comparison matrices, is ~~introduced to~~ ~~intended to~~ reduce the uncertainty of AHP method (Chang, 1996). In this paper, we used a two-stage methodology to conduct Fuzzy AHP in order to identify the key indicators and sub-indicators. Firstly, we used AHP method to identify indicator and sub-indicator weights using expert choice 11.5 software. Secondly, we ~~introduced~~ fuzzy set theory with triangular fuzzy numbers (Zadeh, 1965; Buckley, 1985) and ~~combined~~ this with our AHP analysis results. ~~A triangular fuzzy number, as it is used as the member function in fuzzy AHP, is~~

⁴ ~~We interviewed two directors. One who worked for Evergreen Marine Corp. and one worked for Yang Mine Marine Transport in Taiwan. These two companies are the number one and number two shipping companies in Taiwan and their global rankings~~ ~~we~~, ~~respectively~~, ~~6th~~ and ~~8th~~ ~~as of~~ ~~in~~ September 2017, ~~respectively~~ (Alphaliner, 2017). ~~These directors two interviewees each have more than 30 years' practical working experiences and have been continuously engaged~~ ~~concerned~~ with university education ~~over this for a long time~~. Based on these background data, it is believed that these experts constitute effective interview samples. Expert interviews were conducted in December 2016. Interviews took place in interviewees' offices and used several questions (e.g. "What do you think about the English Medium Instruction in the shipping courses of Taiwan's higher education", "Do you have any improvement suggestions to enhance English Medium Instruction in the shipping courses of Taiwan's higher education", "Could you provide your comment or feedback about our initial questionnaire content") and questionnaire content ~~formed~~ ~~as~~ the focus for ~~ensuring the content validity of the questionnaire~~ ~~expert review~~. We ~~further~~ revised our questionnaire based on interviewees' comments and feedback, in terms of what aspects were considered common, core, and important. Each interview averaged 40 minutes in length.

expressed in Fig. 1. Its membership function is defined by the triplet (l, m, u) , as in Eq. (1) (Zadeh, 1975).

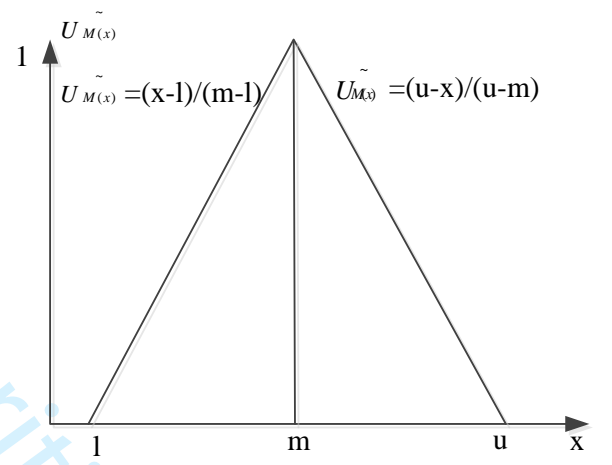


Fig. 1 A triangular fuzzy number.

$$U_{M(x)} = \begin{cases} \frac{(x-l)}{(m-l)}, & l \leq x \leq m \\ \frac{(u-x)}{(u-m)}, & m \leq x \leq u \\ 0, & \text{others} \end{cases} \quad (1)$$

Where $\tilde{M}_{(x)}$ is a triangular fuzzy number, m is the highest possible value of the fuzzy number, and $U_{M(x)}$, l , and u respectively represent the lower and upper bounds.

The operational laws for $M_1=(l_1, m_1, u_1)$ and $M_2=(l_2, m_2, u_2)$, as two fuzzy numbers, are

$$M_1 + M_2 = (l_1 + l_2, m_1 + m_2, u_1 + u_2) \quad (2)$$

$$M_1 \times M_2 = (l_1 \times l_2, m_1 \times m_2, u_1 \times u_2) \quad (3)$$

$$\beta \times M_1 = (\beta l_1, \beta m_1, \beta u_1), \quad \beta > 0, \quad \beta \in \mathbb{R} \quad (4)$$

$$M^{-1} = (l, m, u)^{-1} = \left(\frac{1}{u}, \frac{1}{m}, \frac{1}{l} \right) \quad (5)$$

Such a method is designed to provide decision support for uncertain valuations and priorities, and also to overcome the inability of the AHP to in represent handling linguistic variables (Kabir and Hasin, 2011; Chiu et al., 2014; Nazari et al., 2017).

Questionnaire samples for this paper were collected from the perspectives of three groups groups key to EMI: university English teachers, university shipping teachers, and shipping practitioners. All samples in the questionnaires were recruited by the method of convenience

and snowball sampling (Bryman, 2015), since the experts who are familiar with EMI teaching in the shipping courses of higher education are not easily found in Taiwan. Before sending the questionnaire, ~~the backgrounds of potential samples' participants in the samples~~ (including university English teachers (12), university shipping teachers⁵ (12), and shipping practitioners (12)) ~~backgrounds~~ were reviewed to ensure they were appropriately experienced and qualified~~qualified~~ to answer our questionnaire. Then we made contact with these potential ~~participants~~~~samples~~ to enquire whether they could participate in the survey by email or telephone. In the questionnaire survey, questionnaire ~~participants~~~~samples~~ were individually asked to respond to a series of pairwise comparisons in order to establish the relative importance of the different elements. A nine-point rating scale⁶ was designed to measure the ~~participants' samples'~~ perceptions of what the relative importance of each pair of indicators (sub-indicator) in the same hierarchy was. Scale number "1" means equal importance and scale number "9" extreme importance.

Based on Saaty (1980), a consistency index (CI) was used to capture any inconsistencies within judgments in each aggregate pair-comparison matrix as well as in the overall decisions structures. Then, a consistency ratio (CR) was used to measure how a given matrix compares ~~ds~~ to a purely random matrix in terms of the CI. The CI and CR ~~we~~are formulated as follows:

$$CI = \frac{\theta_{\max} - n}{n - 1} \quad \text{_____} \quad (6)$$

$$CR = \frac{CI}{RI} \quad \text{_____} \quad (7)$$

Where CI is the consistency index; θ_{\max} is the maximum eigenvalue; n is the number of elements in the judgement matrix; RI is the consistency index of a randomly generated reciprocal matrix from the nine-point scale, with forced reciprocals. For matrixes larger than 3 × 3, a value of the $CR \leq 0.1$ is considered acceptable, while larger values of the CR require the decision-maker to revise their judgements (Saaty, 1980). Based on section 2.2, four indicators (including syllabus design, students' characteristics, teachers' characteristics, and university resources) and thirteen sub-indicators were developed (see Table 1).

⁵ They were required to~~must~~ have EMI experiences of shipping courses in ~~the~~ universities in the past three years.

⁶ The nine-point rating scale is widely used in the AHP or Fuzzy AHP based studies (e.g. Chiu et al., 2014; Kabir and Hasin, 2011). Such a scale was introduced by Thomas Saaty (1980), the original ~~developer~~~~who was the founder~~ of AHP.

Table 1: Key indicators and sub-indicators influencing EMI Courses

Indicator	Sub-indicator	Description	Sources
Syllabus Design(A)	Course material (A1)	Textbook, shipping practice news, scene conversation simulation.	Costa and Coleman (2013)
		Suitable subjects and implementation processes to attract student's interest and motivation.	Poon (2013)
	Learning strategies (A2)	Providing effective assessment tools and inspectors/examination authorities to maintain equitable assessment method.	Clegg and Simpson (2016)
		Learning assessment (A3)	
Students' characteristics (B)	Students 'English' level (B1)	Vocabulary, speaking (oral), grammar, lexical abilities.	Byun et al.(2011); Dalton-Puffer (2007); Kim et al. (2014); Başıbek et al. (2014)
	Student's shipping knowledge (B2)	Ship, port, cargo, charter contract, shipping company, agency, freight forwarder, etc.	Byun et al.(2011)
	Learning habits (B3)	Student's learning motivation, learning preparation and review, taking notes skill, etc.	Byun et al.(2011); Evan and Morrison (2011a; 2011b)
Teachers' Characteristics (C)	Teachers 'English' level (C1)	Vocabulary, speaking (oral), grammar, lexical abilities.	Pan (2007); Costa and Coleman (2013); Goodman

			(2014)
	Teacher's shipping knowledge (C2)	Teacher is familiar with teaching subjects regarding shipping related fields.	Huang and Singh (2014)
	Teacher's past experience with EMI teaching (C3)	The experience of teaching EMI courses, teaching skill, classroom management	Dafouz and Camacho-Miñano (2016)
University Resources (D)	Classroom facilities (D1)	Learning environment (e.g. location, space, computer (web) facilities, etc.).	Costa and Coleman (2013)
	Availability of assistance (D2)	Administration staff, Language center (tutor hour), library resources (e.g. video, newspaper).	Hellekjær (2009); Kirkgöz (2009); Agai-Lochi(2015)
	Incentives for teachers (D3)	Overseas training, course subsidies, salary increases, and favorable workload calculation.	Hu (2007); Tong and Shi (2012)
	Incentives for students (D4)	Employability knowledge of international shipping language, improving English abilities.	Costa and Coleman (2013)

4. Results

4.1 Data Collection

With regard to our personal interviews⁷, ~~our interviews included~~ questions included those such as “What do you think about the English Medium Instruction in the shipping

⁷ ~~We interviewed two directors who work for Evergreen Marine Corp. and two who work for Yang-Mine Marine Transport in Taiwan. These two companies are the number one and number two shipping companies in Taiwan and their global rankings were 6 and 8 in September 2017, respectively (Alphaliner, 2017)). These two interviewees have more than 30 years' practical working experiences and have been continuously concerned with university education for a long time. Based on these background data, it is believed that these experts constitute effective interview samples. Expert interviews were conducted in December 2016. Interviews took place in interviewees' office and used several questions regarding EMI teaching. Source: Alphaliner, (2017). — <https://alphaliner.axsmarine.com/PublicTop100/>, access 20 September 2017—~~

courses of Taiwan's higher education?", "Do you have any ~~improvement~~ suggestions to ~~improve~~~~enhance~~ English Medium Instruction in the shipping courses of Taiwan's higher education?", "Could you provide your comments or feedback about our initial questionnaire content?" Based on interviewees' response on the content, we further asked follow-up questions, which were important and related to our research topic. The use of interviews in this way allowed us to explore in-depth (Silverman, 2010) with experts whether our intended questionnaire content was appropriate and in line with our conclusions from the literature and our own experience of the key aspects related to EMI teaching in shipping management courses. We considered that interviews at this stage were most appropriate to explore these aspects as they allowed for dialogue (Bakhtin, 1981) and negotiation, and this in turn allowed us to focus and strengthen our questionnaire.

Questionnaires were sent to 36 ~~participantssamples~~ (including university English teachers (12), university shipping teachers (12), and shipping practitioners⁸ (12)) in Taiwan on 22 February 2017.⁹ In this survey, university English teacher and university shipping teacher samples consisted of individuals who all have experience in EMI teaching in general universities in Taiwan. With regard to shipping practitioners, they all ~~ca~~~~ome~~ from shipping companies in Taiwan. By 27 February, 2017, 28 questionnaires had been received. For each questionnaire, the consistency index (CI) was tested to confirm the consistency of its pairwise comparison matrix. Results ~~showed that~~~~found~~ three questionnaires were highly inconsistent (CI>0.1) (Saaty, 1980) and these were consequently discarded. ~~Thus~~~~erefore~~, the overall response rate was 69.4% (=25/36). The profiles of the 25 ~~participantssamples~~' characteristics (including eight university English teachers, nine university shipping teachers and eight shipping practitioners) are shown in Table 2, Table 3, and Table 4. Results ~~show~~~~reveal~~ that most of the ~~participantssamples~~~~respondents~~ ~~w~~~~are~~ senior experts with at least 10 years working experience in university or shipping industries, thus ~~highlighting~~~~illustrating~~ the reliability of the survey findings.

Table 2: Profiles of the university English teachers samples

Samples	Range	Frequency	Percentage (%)
Job title	Professor	2	25%
	Associate professor	5	62.5%
	Assistant professor	1	12.5%

⁸ These companies include Evergreen Marine Corp. Ltd., Yang Ming Line, Wan Hai Lines, T.S. Line, Chinese Maritime Transport Ltd., COSCO Shipping, NYK Line, Cheng Lie Navigation (CNC) Line, Orient Overseas Container Line, and Taiwan Navigation Corp. Ltd.

⁹ In the first page of the questionnaire, it was stated that ~~the~~ EMI shipping courses considered are shipping management related courses.

	Sub-total	8	100%
Age (years)	Under 40	1	12.5%
	41~50	2	25.0%
	51~60	4	50.0%
	Above 60	1	12.5%
	Sub-total	8	100%
Educational Level	Ph.D.	8	100%
	Master	0	0%
	Bachelor	0	0%
	Sub-total	8	100%
Seniority	10~15	1	12.5%
	16~20	2	25%
	21~25	4	50.0%
	Above 26	1	12.5%
	Sub-total	8	100%

Table 3: Profiles of the university shipping teachers samples

Samples	Range	Frequency	Percentage (%)
Job title	Professor	3	33.3%
	Associate professor	4	44.4%
	Assistant professor	2	22.2%
	Sub-total	9	100% ¹⁰
Age (years)	Under 40	1	11.1%
	41~50	5	55.5%
	51~60	3	33.3%
	Above 60	0	0%
	Sub-total	9	100.0 % ¹¹
Educational Level	Ph.D.	9	100%
	Master	0	0%
	Bachelor	0	0%
	Sub-total	9	100%
Seniority	10~15	2	22.2%
	16~20	3	33.3%
	21~25	2	22.2%
	Above 26	2	22.2%

¹⁰ Round up figures to an approximate.¹¹ Round up figures to an approximate.

	Sub-total	9	100% ¹²
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Table 4: Profiles of the shipping practitioners samples

Samples	Range	Frequency	Percentage (%)
Job title	President/Director	1	12.5%
	Senior deputy director	3	37.5%
	Division director	3	37.5%
	Supervisor	1	12.5%
	Sub-total	8	100%
Age (years)	Under 40	0	0%
	41~50	3	37.5%
	51~60	3	37.5%
	Above 60	2	25.0%
	Sub-total	8	100.0 % ¹³
Educational Level	Ph.D.	1	12.5%
	Master	4	50.0%
	Bachelor	3	37.5%
	Sub-total	8	100%
Seniority	10~15	2	25.0%
	16~20	2	25.0%
	21~25	2	25.0%
	Above 26	2	25.0%
	Sub-total	8	100% ¹⁴

4.2 Fuzzy AHP Analysis

In this paper, [the fuzzy extent values of indicators and sub-indicators is shown in Table 5. as shown in Table 56](#), all consistency ratio (CR) values are less than 0.1, and thus fit the consistency test (Saaty, 1980; Kabir and Hasin, 2011). The local weights of each indicator and sub-indicator are shown in Table 63. The results indicate that teachers' characteristics (0.262) is the most important indicator influencing the implementation of EMI, followed by syllabus design (0.256), university resources (0.244), and students' characteristics (0.239). With regard

¹² Round up figures to an approximate.

¹³ Round up figures to an approximate.

¹⁴ Round up figures to an approximate.

to sub-indicators, learning strategies (0.350), students 'English' level (0.386), teachers 'English' level (0.374), and availability of assistance (0.347) were perceived to be the most important sub-indicators with respect to each indicator in relation to syllabus design, students' characteristics, teachers' characteristics, and university resources, respectively.

Further, the global weights were synthesized from the second level, and were arrived at drawn by multiplying the local weights and the corresponding indicator in the level above, and then adding them to each element in a level according to the indicator affected. The results show reveal that the top three most important indicators influencing the implementation of EMI are teachers 'English' level (0.0979), students 'English' level (0.0923) and learning strategies (0.0894), respectively.

Table 5 Fuzzy extent value of sub-indicators

Indicator	Fuzzy extent value			Sub-indicator	Fuzzy extent value		
Syllabus Design	0.162	0.254	0.420	Course material	0.218	0.360	0.544
				Learning strategies	0.213	0.383	0.537
				Learning assessment	0.184	0.257	0.544
Students' characteristics	0.149	0.233	0.399	Students 'English' level	0.217	0.394	0.679
				Student's shipping knowledge	0.129	0.268	0.545
				Learning habits	0.217	0.337	0.553
Teachers' Characteristics	0.149	0.278	0.428	Teachers 'English' level	0.215	0.395	0.591
				Teacher's shipping knowledge	0.211	0.325	0.444
				Teacher's past experience with EMI teaching	0.211	0.279	0.537
University Resources	0.138	0.235	0.423	Classroom facilities	0.186	0.282	0.365
				Availability of assistance	0.145	0.242	0.356
				Incentives for teachers	0.214	0.266	0.367
				Incentives for students	0.145	0.209	0.362

Table 6: Fuzzy AHP results.

Indicator	Local weights	Consistency ratio (CR)	Sub-indicators	Local weights	Global weights	Rank
Syllabus	0.256	0.0172	Course	0.346	0.0886	4

			Design	material Learning strategies	0.350	0.0894	3
				Learning assessment	0.304	0.0778	8
			Students' characteristics	Students 'English' level	0.386	0.0923	2
				Student's shipping knowledge	0.282	0.0675	9
				Learning habits	0.331	0.0792	7
			Teachers' Characteristics	Teachers 'English' level	0.374	0.0979	1
				Teacher's shipping knowledge	0.305	0.0799	6
				Teacher's past experience with EMI teaching	0.320	0.0838	5
			University Resources	Classroom facilities	0.266	0.0647	11
				Availability of assistance	0.347	0.0576	12
				Incentives for teachers	0.270	0.0657	10
				Incentives for students	0.228	0.0555	13

Notes: * Local weight is derived from judgment with respect to a single indicator; ** Global weight is derived from multiplication by the weight of the indicator.

5. Discussions and Conclusions

The above results show the relative importance of factors in the implementation of EMI in a Taiwanese context. Using 25 effective samples, teachers' characteristics are shown to be the most important indicator, ~~but these were~~ closely followed by syllabus design, university resources, and students' characteristics. Arguably, all these indicators are key and must all be in place, but the lead indicator needs to be the teachers' characteristics. This being the case, it is arguable that the other factors ~~can~~ play a supporting role. Thus, institutions in Taiwan arguably need to help support teachers in their approaches and roles, possibly through providing incentives, but also through providing assistance and resources. This ~~strategy approach~~ is confirmed by the second level results. These show that teachers' 'English' level is the key factor, ~~but this is~~ closely followed by students' 'English' level, and learning strategies. Arguably, this would suggest that ~~participants in the samples~~ felt that students needed to have both a good level of English, ~~and but~~ also a good range of learning strategies to be able to help them understand the content, ~~particularly perhaps~~ when their level of English did not enable them to do so.

With regard to improving teachers' English level, it is suggested that professional English teachers in the university can work alongside subject lecturers on EMI courses. For example, English teachers can help guide students' communication in the subject regarding their

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3 assessments and term projects. Non-English professional EMI teachers could gradually
4 improve their English teaching skills over time and ~~by through~~ considering the guidance given
5 to their students by the English teachers. In addition, university authorities could provide
6 incentives (e.g. extra teaching pay) to invite more English teachers to join EMI programs and
7 ~~to~~ work alongside subject lecturers. We would suggest that such teachers have some of
8 their time allocated to being part of the Shipping department and gain familiarity and
9 confidence with the subject context. Although there are cost implications with these
10 suggestions, we would argue that their benefits in terms of improved student work and
11 learning, and lecturer confidence and ability more than compensate for any costs.²²
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20 With regard to low global weights ranking, four sub-indicators (classroom facilities,
21 availabilities of assistance, incentives for teachers, and incentives for students) are viewed as
22 ~~being~~ relatively ~~unnon~~ important indicators. Such a result might be ~~attributed to~~ affected by
23 the fact that some experts ~~might~~ think university resources ~~are~~ is a ~~prerequisite for~~ antecedent
24 ~~factor of~~ EMI, and this could have affected their decision identification when completing the
25 questionnaires. Such a situation constitutes a ~~limitation~~ a limitation to our study and is an
26 aspect that ~~could~~ ~~an~~ be investigated in future research ~~in terms of potential solutions~~.
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32 Arguably, ~~our these~~ results ~~would~~ suggest that EMI ~~instruction~~ needs to be given more space
33 and time than ~~subject instruction in the~~ first language ~~instruction~~, and that this in turn needs
34 more support from the teachers and students. This ~~clearly~~ has ~~a number of~~ implications in terms
35 of resources and time. Firstly, from a timetabling perspective, it is arguable that EMI instruction
36 needs to be given more ~~spacetime~~ in the timetable. This could either be done on a weekly basis
37 by according more time to each lesson, or it ~~could~~ be done over a lengthier time by extending
38 the number of weeks of the course. ~~Our These~~ results suggest that, given the importance of
39 learning strategies, a key ~~help~~ factor for the students and the teachers ~~to help~~ in explaining the
40 concepts may be to allow more time for questions and answers at the end of the session to allow
41 for dialogue.
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48 Interestingly, ~~our the~~ results do not show that shipping knowledge was ~~considered to be~~ a key
49 factor. This could be because such knowledge is taken for granted, or it could be because the
50 focus of the study was on EMI instruction. If the latter is the case, it could be assumed that
51 ~~participants in the~~ samples felt that when they were responding in relation to ~~questions about the~~
52 ~~samples~~ 'English' level, they were doing so ~~within response to~~ the perception that this 'English'
53 related to ~~their~~ ability to express themselves in the subject area in 'English', i.e. their ability
54 to deliver subject knowledge in 'English'.
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Further research would be useful to study aspects such as how ~~participants~~ ~~samples~~ felt about assessments being conducted in English, ~~– about students’ perceptions of EMI, about how the effectiveness of such programs in delivering knowledge can be judged, or more~~ specific research about the ~~exact~~ type of support that would help students and teachers deliver EMI, ~~about students’ perceptions of EMI, and about how the effectiveness of such programs in delivering knowledge can be judged.~~ It is possible, we would argue, that such questions ~~are~~ ~~would be~~ key for any policy makers, particularly if the policy of introducing EMI has the implications in terms of resources and timetabling that ~~our~~ ~~these~~ results suggest. We note, however, that in order to be successful, such a change to EMI will indeed require support and assistance as ~~our~~ ~~these~~ results ~~would~~ suggest, but that, given this, it will help develop Taiwan’s graduates for employability, and help Taiwan recruit more international students to study there. Indeed, it is arguable that the costs of implementing EMI could be offset by these benefits.

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Reviewer(s)' Comments to Author:**Reviewer: 1****General Comment to the Author**

The topic is interesting and valuable to EMI in shipping filed, I appreciate the authors' efforts on revising the paper. I satisfy the outcomes of paper in this current form. However, the authors need to further confirm which method was used, only AHP or fuzzy AHP. If the authors applied the fuzzy AHP, the description of fuzzy theory (triangular fuzzy number), fuzzy formulation, and the results of triangular fuzzy number should be added in the paper. Otherwise, it seems only AHP was performed in this study.

Our response: Thank you for highlighting this. We agree this needs to be clearer. We have now added the description of fuzzy theory (triangular fuzzy number), fuzzy formulation, and the results of triangular fuzzy number in our revised manuscript. Please see Fig. 1, equation (1)~(5) in Section 3 (Methodology), and Table 5 in Section 4.2 (Fuzzy AHP analysis).

Additional Questions:**Comment 1:**

1. Originality: Does the paper contain new and significant information adequate to justify publication?: The topic is interesting and valuable to EMI in the shipping management field.

Our response: Thank you for your comments. We are pleased to read this.

Comment 2:

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?: The paper makes a comprehensive review on EMI studies.

Our response: Thank you for your comments.

Comment 3:

3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual

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3 work on which the paper is based been well designed? Are the methods
4 employed appropriate?: I still doubt the method the authors used in this study.
5 The authors argued that two stage methodology was performed. However, only
6 the results of fuzzy AHP were showed in the paper. Thus, it seems only AHP
7 approach was used.
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11 **Our response:** Thank you for bringing this to our attention. We hope our
12 revisions have addressed these issues.
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17 **Comment 4:**

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19 4. Results: Are results presented clearly and analysed appropriately?
20 Do the conclusions adequately tie together the other elements of the paper?: The
21 original results had been revised and were presented clearly.
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26 **Our response:** Thank you for your comments.
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31 **Comment 5:**

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33 5. Practicality and/or Research implications: Does the paper identify
34 clearly any implications for practice and/or further research? Are these
35 implications consistent with the findings and conclusions of the paper?: The
36 practical implications were presented clearly.
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39 **Our response:** Thank you for your comments.
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44 **Comment 6:**

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46 6. Quality of Communication: Does the paper clearly express its case,
47 measured against the technical language of the field and the expected
48 knowledge of the journal's readership? Has attention been paid to the clarity of
49 expression and readability, such as sentence structure, jargon use, acronyms,
50 etc.: The quality of communication is good.
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55 **Our response:** Thank you for your comments. We are pleased that it reads well
56 in your opinion.
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Reviewer(s)' Comments to Author:**Reviewer: 2****General Comment to the Author**

First of all, I thank the author for the good attempt in clarifying, explaining, answering and responding to my comments as per my last (first) review.

Please see my second set of comments hereunder for the author's consideration in the light of improving the manuscript further:

Comment 1.

I must appreciate the author's good efforts in proof-reading and editing the manuscript once again, in particular with the help of two native English speakers with extensive experience in teaching English. Unfortunately, it is noted that accuracy and the command of written English are still not good enough. I am still able to easily spot out quite a number of typos and mistakes in the revised manuscript – like, just the first line in the Abstract – should “universities in non-speaking countries” be read as “universities in non-English speaking countries”; line 3 in 4.2. in page 13, shall Table 3 be read as Table 5? As such, I maintain my firm stand that the author is highly recommended to conduct rigorous check and edit of the revised manuscript before it can be considered as a publishable one.

Our response: Thank you for highlighting these. Based on the abstract guidelines for this journal, we have slightly revised our abstract content. Also, in Line 3 of section 4.2, Table 3 is changed to be Table 6 (note: we add one Table in this revised manuscript). The full content has again undergone a rigorous check and edited in this revised manuscript. We agree with you entirely that the manuscript required this rigorous check and edit and have made quite a large number of modifications to improve the flow and logic of the text. Thank you for your vigilance and attention to detail on this. It is greatly appreciated and we feel the manuscript is much stronger and more professional as a result of us doing this. All modifications are visible through the use of the Tools Track Changes facility.

Comment 2.

In line with point 1, I am still not very sure how the author presents references in a consistent and logical manner in connection with the citation of more than one reference in the manuscript. To my best understanding, it seems that the references are in the first order of the year of the publication (the earliest first)

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2
3 and then in the alphabetical order of the last name of the first author. However,
4 there are quite a number of inconsistency in this connection – like, page 5 lines
5 13 and 14; page 6 lines 12 – 13 etc. I highly suggest the author to adopt a
6 consistent and logical approach.
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10 **Our response:** Thank you for highlighting these issues. We agree. We have
11 revised the order of references in line with your suggestions and have carefully
12 checked all the references in terms of ensuring the logical consistency in how
13 they are ordered in this revised manuscript. We thank you for the suggestion as
14 responding to it has made the manuscript far more professionally presented.
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20 Comment 3.

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22 I also note that the author has good attempt in maintaining a consistent use of the
23 expressions. However, the consistent shall be appropriately used – say, the
24 expression of “samples” in page 16 shall better be read as “respondents”. As such,
25 I still suggest the author to maintain consistency in the use of expressions on one
26 hand but have to provide appropriate expressions on the other whereby the author
27 is recommended to re-check the manuscript once again.
28
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31 **Our response:** Thank you for highlighting this. What we have done in our
32 approach is to carefully consider the specific context and time we have used
33 ‘samples’ or ‘respondents’ or ‘participants’. We have carefully tried to ensure
34 consistency in terms of readability and comprehensibility in our usage. Thus,
35 where we have considered it appropriate to do so, we have used ‘samples’, at
36 other times we have used ‘participants in the samples’ and at other times we
37 have used ‘participants’. This process has also included carefully specifying
38 exactly what the samples were and the evidence and methods were in our
39 literature review section. We hope it has made the article’s flow clearer.
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48 Comment 4.

49 I am not very sure whether it is really necessary to repeat several sections in the
50 manuscript in such a great details – say, note 3 in page 4 is repeated in details
51 once again in 4.1. in page 10.
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54 **Our response:** Thank you for highlighting this. We have deleted the repeated
55 content in section 4.1.
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60 Comment 5.

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In your note 3 in page 4, the number of interviewees sounds unclear in the first sentence which reveals that the author has interviewed a total of 4 directors, however line 4 states that “the two interviewees”. As said, I am not very clear about the purpose of the interviews – is it really for data collection (as stated in 4.1. in page 10), or for content validity of your identified indicators and sub-indicators, or the interviewees help develop the indicators and sub-indicators. To my best understanding from the manuscript: the author conducted extensive literature review to develop and identify the indicators and sub-indicators, with which the author then carried out interviews for content validity with the interviewees (shipping executives, how about from academic as well?) to finalize and conclude the questionnaire. If this is the understanding, the author may have to adjust the contents and logical flow of the manuscript to reflect the same. However and if the interviews are used to help developing and identifying the indicators and sub-indicators, together with the extensive literature review, the manuscript shall detail out the procedures clearly and precisely. In any cases, the author is recommended to re-think the logical flow therefor and to adjust the contents of the manuscript accordingly as the existing contents are still not very clear in this connection – in line, the interviews are not for data collection but content validity of the questionnaire – the data collection is from the respondents to the questionnaire.

33 **Our response:**

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Thank you for pointing this and useful suggestion. In this paper, we have interviewed “two directors”, one of whom works in Evergreen Marine Corp., and one of whom works in Yang Mine Marine Transport in Taiwan. Therefore, in footnote 3, we changed the sentence from “We interviewed two directors who work for Evergreen Marine Corp. and two work for Yang Mine Marine Transport in Taiwan.” to “We interviewed two directors. One worked for Evergreen Marine Corp. and one worked for Yang Mine Marine Transport in Taiwan.”.

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In this paper, the purpose of interviewing was to ensure content validity of indicators and sub-indicators. We then used these indicators and sub-indicators to finalize and conclude the questionnaire.

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We did not conduct interviews with other academics as the two directors we interviewed were also senior shipping course advisers (industry representative) in the universities for over 10 years. Thus, they fully and comprehensively understood the key development indicators of EMI teaching in the shipping courses of Taiwan’s higher education. We believed that they were able to provide sufficient recommendations and feedbacks regarding our questionnaire content.

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3 It might be our research limitation that we did not interview other academics
4 to conduct content validity of questionnaire. We believe we will interview more
5 stakeholders (e.g. academic) in future research and have highlighted this as a
6 possibility for future research in the conclusion.
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10 In order to adjust the contents and logical flow of the manuscript, we add one
11 paragraph in the end of Section 2 (Literature Review), as follows.
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13 *“After four indicators and their sub-indicators were developed, face-to-face*
14 *personal interviews with senior shipping practitioners were implemented to*
15 *ensure the content validity of the questionnaire.”*
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21 Comment 6.

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23 Hope the above further comments help the author strengthens the contents and
24 quality of the manuscript. In any cases, it appears that the author shall take a more
25 rigorous and careful review and edit of the revised manuscript as it seems to me
26 that the logical and sequential flow is not good enough, and the written English
27 needs obvious improvement, which are all important to improve the overall
28 quality of the manuscript before the same can be considered as publishable.
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32 **Our response:**

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34 Thanks for your constructive and extremely helpful comments and suggestions.
35 We have carefully check the logical and sequential flow of our manuscript and,
36 as noted above in response to comment 1, we feel this has made the manuscript
37 much stronger and more professional. Thank you again for bringing these issues
38 to our attention.
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43 Additional Questions:

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45 **Comment 1:**

46 **1. Originality: ** Does the paper contain new and significant information
47 adequate to justify publication?: As per my comments in my last (first) review.
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50 **Our response:** Thank you for your comments.
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54 **Comment 2:**

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56 **2. Relationship to Literature: ** Does the paper demonstrate an adequate
57 understanding of the relevant literature in the field and cite an appropriate range
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3 of literature sources? Is any significant work ignored?: As per my comments in
4 my last (first) review.
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7 **Our response:** Thank you for your comments.
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11 **Comment 3:**
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13 3. Methodology: Is the paper's argument built on an appropriate base
14 of theory, concepts, or other ideas? Has the research or equivalent intellectual
15 work on which the paper is based been well designed? Are the methods
16 employed appropriate?: As per my comments in my last (first) review.
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20 **Our response:** Thank you for your comments.
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24 **Comment 4:**
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26 4. Results: Are results presented clearly and analysed appropriately?
27 Do the conclusions adequately tie together the other elements of the paper?: As
28 per my comments in my last (first) review.
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32 **Our response:** Thank you for your comments.
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36 **Comment 5:**
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38 5. Practicality and/or Research implications: Does the paper identify
39 clearly any implications for practice and/or further research? Are these
40 implications consistent with the findings and conclusions of the paper?: As per
41 my comments in my last (first) review.
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45 **Our response:** Thank you for your comments.
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49 **Comment 6:**
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51 6. Quality of Communication: Does the paper clearly express its case,
52 measured against the technical language of the field and the expected
53 knowledge of the journal's readership? Has attention been paid to the clarity of
54 expression and readability, such as sentence structure, jargon use, acronyms,
55 etc.: As per my comments in my last (first) review.
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59 **Our response:** Thank you for your comments.
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3 Constructing English Medium Instruction indicators in the shipping
4 courses of Taiwan's higher education
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