English for Specific Purposes Education in University Contexts: A Research Synthesis

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Abstract

Many higher education institutions have offered English for Specific Purposes (ESP) courses with a particular occupational focus (i.e., English for Academic and Occupational Purposes, EAOP) to help students be successful in their academic disciplines and prepare them for work in their respective fields after graduation. This study presents findings from a research synthesis that examined how research on EAOP education in university settings has been conducted and what issues and challenges are involved in or should be considered regarding the instruction. Using three databases and eight key words, 16 previous empirical studies were finally selected for this synthesis. Based on the results of this synthesis, directions for future research on EAOP education in university contexts and suggestions for ESP practitioners and program developers are discussed.

Keywords: English for Specific Purposes, English for Academic Purposes, English for Occupational Purposes, ESP in university, research synthesis

Introduction

Based on the increasing awareness that traditional language education and general English courses do not meet the demands of language learners, English for Specific Purposes (ESP) has emerged as one of the significant approaches in English language education (Anthony, 1997). Moreover, due to an increasingly internationalized workforce and the enormous use of English in the workplace, ESP has become important in English teaching in institutions of higher learning (Hyland, 2002; Lin, Chang, & Lin, 2014). ESP has broadly been divided into two major subfields, English for Academic Purposes (EAP) and English for Occupational Purposes (EOP), based on the contexts in which English education takes place and learners' English learning purposes. However, this distinction has been criticized because it fails to capture the fluid nature and the degree of over-

laps between various subtypes of ESP (Dudley-Evans & St John, 1998). In addition, there have been concerns regarding gaps between ESP learning in academic settings and its use in the workplaces as well as the relationship between ESP classroom discourses, professional discourses, and professional practices (Bhatia, Anthony, & Noguchi, 2011).

Based on the understanding of these issues, ESP-related researchers and educators have considered how English instruction in college and university contexts in which English is a foreign language can help students be more successful both in their specific disciplines and professional fields (Bacha & Bahous, 2008). As one of the initiatives, higher education institutions embarked on offering EAP courses with a particular occupational focus (Mechraoui, Noor, Ibrahim, Muhamad, & Malek, 2013). These courses are offered to university students in order to prepare them for work in their respective fields after graduation. For example, students in English courses for medical purposes learn highly specialized medical terminology, medical discourses, and technical language used in medical contexts (Antic & Milosavljevic, 2016). By providing students with opportunities to learn not only EAP in academic settings, but EOP for their future career as well, such courses connect students' language learning with their professional lives (Antic & Milosavljevic, 2016). In this sense, these courses are classified, in this paper, as English for Academic and Occupational Purposes (EAOP) since they are the hybrid form of EAP and EOP, rather than being categorized into either EAP or EOP.

There have, however, been issues surrounding EAOP courses, including the degree of specificity and effectiveness of the courses and the learning gaps and transferability between classroom and workplace settings. Considering these issues is important not only for students and educators who engage in English learning for occupational purposes in academic contexts but also for universities offering the courses as well as workplaces that need to hire employees with sufficient linguistic and professional knowledge. Although interest in EAOP education has been increasing in many non-English speaking countries, it has received less attention compared to research on EAP and EOP respectively. Considering the unclear boundary between EAP and EOP and the importance and increasing interest in EOP education in academic settings, the study examined the current status and issues of EAOP education in university contexts. This study, therefore, performed

a systematic review of the literature on the proposed topic in an attempt to answer the following questions: 1) what research on EAOP education for undergraduate and graduate students has been conducted? 2) what issues or challenges are involved in EAOP education in university contexts? and 3) what implications and suggestions for practitioners and researchers are drawn from the study?

Methodology

Research Synthesis

A research synthesis is "the systematic secondary review of accumulated primary research studies" (Norris & Ortega, 2006, p. 4). According to Norris and Ortega (2007), a research synthesis is different from a traditional reviewing approach that does not provide specific set of strategies for conducting a review. Instead, it heavily relies on the content knowledge of the research (Norris & Ortega, 2007). The approach is particularly useful to "generate knowledge that informs future research about problems of interest to applied linguists" and to "uncover gaps, weaknesses, and needs in a given domain in ways that few narrative literature reviews can" (Norris & Ortega, 2007, p. 809). Norris and Ortega (2007) identify three characteristics of a systematic research review: 1) a selection of previous studies is carefully rationalized, 2) a researcher focuses directly on the data reported in each study, and 3) coding books or protocol are used to determine what to look for in each study and across the studies. Following this approach, the study used keywords to identify previous empirical studies on the topic, and the studies were finally selected based on particular inclusion criteria. Then an in-depth review of the studies was performed to analyze them and answer the questions proposed in the study.

Data Collection and Analysis

In order to retrieve empirical studies, three databases, Educational Resources Information Center (ERIC), Google Scholar, and ScienceDirect, were searched using the following key terms: English for occupational purposes, English for professional purposes, English for academic purposes, vocational English, occupational English, occupational English in university, vocational English in university, and university ESP. The year of publication and the scope of journals were

not particularly limited because there were not many studies examining the hybrid form of EAP and EOP. However, as this synthesis was conducted in the fall 2017, empirical studies published before then were reviewed and selected for the study. Only peer-reviewed articles dealing with non-native English speaking undergraduate or graduate students attending EAP courses related to particular professional domains were selected. Through this reviewing process, 16 articles were finally included in this synthesis.

The previous empirical studies finally selected for this synthesis were analyzed based on the following criteria: (1) professional categories, (2) focus of study, and (3) research context. A coding sheet was created, and the researcher coded each paper into the sheet according to the criteria. The studies were compared within and across domains in order to identify common issues, challenges, and discrepancies among the studies.

Findings and Discussion

Findings are organized according to the research questions. Considering the wide range of issues covered by this synthesis, each of the findings sections is followed by discussion of the results, rather than dividing the two parts, findings and discussion, into separate sections.

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Professional category. In terms of classification of the studies by particular disciplines, they were categorized into six different professional areas: engineering (Category 1), business (Category 2), medicine (Category 3), hospitality (Category 4), economics and logistics (Category 5), and public relations (Category 6). Table 1 shows the professional categories and the number of studies falling under each of the categories.

Table 1. Professional Categories of Study Included in the Research Synthesis

Categories	Professional categories	Number of studies
C1	Engineering	5
C2	Business	4
C3	Medicine	2
C4	Hospitality	2
C5	Economics and Logistics	2
C6	Public relations	1

As shown above, many of the empirical studies of EAOP education in university contexts fell under Category 1 and 2 by focusing on students involved in the fields of engineering (Haghighi, 2012; Hatam & Shafiei, 2012; Kaewpet, 2009; Rajprasit, Pratoomrat &Wang, 2015; Wood, 2009) or business (Bacha & Bahous, 2008; Jackson, 2005; Liton, 2015; Zhang, 2013). Research dealing with EAOP courses in medicine, hospitality, and economics and logistics has two empirical studies respectively: Antic and Milosavljevic (2016) and Mazdayasna and Tahririan (2008) in Category 3, Wang and Sun (2014) and Lin et al. (2014) in Category 4, and Taillefer (2007) and Ulucay and Demirel (2011) in Category 5. Regarding Category 6, only one study was identified, which was conducted by Pattanapichet and Chinokul (2011).

In sum, it seems apparent that research on EAOP education in university contexts has been more actively conducted in the fields of engineering and business. On the contrary, it has been revealed that other ESP-related fields such as medicine, economics, aviation, tourism industry, or interpretation have received little attention despite the growing interest and importance of EAOP education in university settings.

Focus of study. Focuses of the previous empirical studies in each professional category were classified into the following groups: (1) needs analysis, (2) course evaluation, (3) curriculum or course design, and (4) perception of students' English. As shown in Table 2, (1) needs analysis was the most frequently examined topic across the professional domains. Dudley-Evans and St John (1998) stressed that the corner stone of ESP is needs analysis because it leads to a very focused course for learners involved in a particular professional domain. Reflecting the impor-

tance of needs analysis in ESP education, among the 16 studies, half (Antic & Milosavljevic, 2016; Bacha & Bahous, 2008; Jackson, 2005; Kaewpet, 2009; Liton, 2015; Mazdayasna & Tahririan, 2008; Taillefer, 2007; Ulucay & Demirel, 2011) focused on identifying English learning needs for students in the respective fields.

The second most frequently investigated topic was (4) perception of students' English. Four studies (Pattanapichet & Chinokul; 2011; Rajprasit et al., 2015; Wang & Sun, 2014; Zhang, 2013) examined stakeholders' (e.g., learners, instructors, or professionals) perceptions of students' current English ability or the level of English proficiency that students are required to have. Interestingly, evaluation of EAOP courses and curriculum or course design have been relatively neglected in research on EAOP education for university and graduate students. In particular, only one study on EAOP course evaluation has been identified despite its importance in enhancing the quality and effectiveness of the courses.

Table 2. Focus of Previous Studies per Professional Category

Focus	Engineering	Business	Medicine	Hospitality	Economics Logistics	Public Relations
(1) Needs analysis	1	3	2		2	
(2) Course evaluation	1					
(3) Curriculum or course design	2			1		
(4) Perception of students' English	1	1		1		1

Although each of the 16 studies was classified into one particular focus group in this synthesis, the boundaries between the four groups were not clear because some studies included characteristics of more than two research focuses. For example, although the three studies in Category 2 (Bacha & Bahous, 2008; Jackson, 2005; Liton, 2015) and one in Category 5 (Ulucay & Demirel, 2011) were classified into (1) needs analysis, the analysis was conducted based on research participants' perceptions of students' current or required English proficiency, which falls under (4) perception of students' English. The focus group of the studies in this synthesis was determined based on the researcher(s)' description of the research aim.

To summarize, it has been uncovered, through this synthesis, that previous studies on EAOP education in university settings focused mainly on analyzing

and identifying what learners need to learn through the courses. However, subsequent studies describing how results gained from needs analysis are used to design or evaluate EAOP courses have not been identified. In other words, this result indicates the need to consider how results from needs analysis can be used in or contribute to actual ESP education fields.

Research context. This syntheszis also examined the contexts in which the previous studies were conducted. As shown in Table 3 below, the majority of the studies, 12 out of 16 (Bacha & Bahous, 2008; Haghighi, 2012; Hatam & Shafiei, 2012; Jackson, 2005; Kaewpet, 2009; Lin et al., 2014; Liton, 2015; Mazdayasna & Tahririan, 2008; Pattanapichet & Chinokul, 2011; Rajprasit et al., 2015; Wang & Sun, 2014; Zhang, 2013) were conducted in Asian countries, including countries in the Middle East. This result may reflect not only the increasing interest in EAOP education in those countries, but the high demands for EAOP courses due to the limited environment where students learn English in foreign language learning contexts as well.

Table 3. Research Context per Professional Category

Focus	Engineering	Business	Medicine	Hospitality	Economics Logistics	Public Relations
(1) Southeast Asia	2	1*				1
(2) Northeast Asia		2		2		
(2) Middle East	2	2*	1			
(3) Europe				1	2	
(5) The U.S.	1					

Note. The numbers with an asterisk include the same paper dealing with the two research contexts

Although the previous studies on EAOP education have been mostly carried out in Asian and Middle Eastern countries, they were also heavily limited to specific countries such as Thailand, China, and Iran. This result reflects the fact that research on EAOP in university contexts has not been actively conducted in many non-native English-speaking countries including a variety of Asian and Middle Eastern countries. In case of research dealing with the American context, only

one study in the engineering field was identified. It was interesting to see that little attention has been paid to EAOP education in English speaking countries including the U.S. despite of the fact that those countries have a large population of non-native English speakers including immigrants and refugees. Regarding the research contexts of professional categories, the studies related to the fields of medicine, hospitality, economics, and public relations have been carried out in limited areas; for example, the two studies related to hospitality focused on EAOP education in the Taiwanese context, and the studies dealing with economics and logistics were conducted in the European context. This result shows that a very small number of studies focusing on such disciplines are even limited to dealing with specific contexts.

In summary, this synthesis uncovered that the majority of studies on EAOP education for undergraduate or graduate students have been carried out in Asian countries including countries in the Middle East, and moreover the studies also focused on a small number of particular countries.

Issues or Challenges Regarding EAOP Education

This synthesis identified some issues and challenges involved in EAOP education. As EAOP education is a part of ESP, general issues and challenges that have existed in ESP-related education as a whole were also found in EAOP education for undergraduate and graduate students. In this section, how debatable issues regarding ESP are addressed in the previous empirical studies are discussed. Other EAOP-related issues or challenges emerged from the studies are also identified.

Generality versus specificity. The discussion of specificity, which is about whether ESP should focus on specific skills, language forms, and texts needed by particular learners (Hyland, 2002) or it should take a wide-angle approach to language and skills related to various subjects (Williams, 1978), has been controversial in the field of ESP for many years. Considering the importance of this issue in ESP education, this synthesis examined how the previous studies addressed it.

Among the 16 studies, only two studies (Antic & Milosavljevic, 2016; Mazdayasna & Tahririan, 2008) emphasized that EAOP courses needed to improve students' more general English proficiency, rather than focusing on a particular

discipline area. Although Antic and Milosavljevic (2016) recognized the importance of developing medical students' oral skills closely related to their profession, they put more emphasis on the students' general English communicative skills to help them initiate a conversation or present ideas. Mazdayasna and Tahririan (2008) also stressed that students have a more urgent need to enhance their general English proficiency. They pointed out that the level of the students' general English proficiency is low even though they take a general English course before they participate in a subject-specific English course.

Unlike Antic and Milosavljevic (2016) and Mazdayasna and Tahririan (2008), nine studies (Bacha & Bahous, 2008; Jackson, 2005; Kaewpet, 2009; Liton, 2015; Pattanapichet & Chinokul, 2011; Rajprasit et al., 2015; Taillefer, 2007; Wang & Sun, 2014; Zhang, 2013) explicitly supported the argument that EAOP courses should be organized to be useful for a particular discipline or a professional field. For example, Wang and Sun (2014) concluded that EAOP courses for hospitality students should focus on preparing the students to access their specific workplace. Unlike Hutchison and Waters (1987), who advocated the view that taking a narrow approach contributes to demotivating the learners, the researchers argued that the integration of language learning and particular content knowledge increases learners' motivation. In this way, the majority of the studies supported the value of specificity of ESP and the need for adopting a narrow-angle approach to EAOP courses.

However, this synthesis of the empirical studies uncovered that although the majority of the empirical studies supported the specificity of EAOP instruction, the issue is still controversial due to the following reasons; first, stakeholders who participated in a study (e.g., instructors, professionals, or learners) have a variety of different perspectives regarding the idea of specificity. In the case of Ulucay and Demirel's (2011) study, although the students and professionals engaged in the field of logistics agreed that the curriculum should focus on subject-specific content, nearly half of the English instructors disagreed with the view. Second, the researchers who support specificity of ESP also have conflicting views on when EAOP courses should be provided to students. For example, Jackson (2005) described that first-year students need general business communication courses, and courses focusing on the particular discipline should be offered to second- and

third-year students. Contrary to this, Pattanapichet and Chinokul (2011) argued that ESP courses dealing with a particular profession's needs should be provided at the beginning of students' university study. Third, levels of students' English proficiency is also closely related to the issue of specificity. While Rajprasit et al. (2015) stressed that ESP courses are appropriate for the students who have already possessed a certain level of English proficiency (generally the intermediate level), Pattanapichet and Chinokul (2011) argued that discipline-specific ESP courses should be provided to all students as soon as they start their study in university.

Another interesting point revealed in this synthesis was that the two studies advocating the general approach to English teaching dealt with students engaged in the field of medicine. Although it may be difficult to generalize that particular disciplines or professions hold particular views on the specificity of ESP, it would be meaningful to further examine whether specific characteristics of each professional area may impact its adoption of a general or a particular approach to EAOP courses in university settings.

Collaboration between language and subject instructors. Another important issue regarding EAOP instruction in university settings is in regard to the integration or cooperation between the different roles of two instructors for language teaching and the subject content. In order to help students enhance not only their linguistic skills and proficiency but their discipline-specific content knowledge as well, it should be considered how the two different areas can be effectively integrated and taught in an EAOP course. Regarding this issue, however, Hyland (2002) criticizes that ESP courses tend to take a general approach because ESL experts or language teachers do not retain sufficient expertise and confidence to teach discipline-specific knowledge, and subject instructors also generally lack the expertise in teaching literacy skills. The issue of the two instructors' different roles and potential for collaboration has also been found in the previous studies.

Among 16 empirical studies, nine (Antic & Milosavljevic, 2016; Bacha & Bahous, 2008; Hatam & Shafiei, 2012; Jackson, 2005; Lin et al., 2014; Liton, 2015; Pattanapichet & Chinokul, 2011; Taillefer, 2007; Wang & Sun, 2014) argued the need for a close cooperative effort between language teachers and subject instructors. In particular, Antic and Milosavljevic (2016) and Bacha and Bahous

(2008) used the term 'interdisciplinary cooperation' to emphasize the importance of the instructors' collaboration in order to meet students' needs and yield the best possible educational outcomes.

On the other hand, seven other studies did not address the issue. Among the studies, Haghighi (2012) focused on EAOP course design based on needs-based syllabi and tasks, and Wood (2009) examined the effectiveness of the EAOP course. However, the studies did not discuss how to integrate the two fields of English language and discipline-specific content even though it is important to reflect the learners' needs for both academic and professional situations when designing and implementing ESP courses. In case of Ulucay and Demirel's (2011) study, the researchers explored the perspectives of three different groups, English instructors, professionals, and students, in order to design a curriculum model for students in logistics department. However, the study focused on how English language learning needs are different among the groups, not addressing how their different needs or perspectives should be dealt with or integrated into the EAOP curriculum model. In addition, Rajprasit et al. (2015) argued that their research results may provide ESP stakeholders with ideas of how to design tailor-made ESP courses that perfectly fit the student's engineering field. Nevertheless, they included only English instructors and undergraduate students as research participants and did not consider what and how subject-related knowledge should be included in the courses.

In sum, the nine studies brought the issue on combining English language learning and content knowledge and emphasized the importance of collaborative efforts between the two instructors in EAOP courses. However, examining how the previous studies dealt with this issue revealed some weaknesses. First, although EAOP courses aim to help students enhance both their English ability and discipline- and profession-specific knowledge, many of the studies did not focus on how the two aspects can be effectively integrated into the courses. Second, although more than half of the studies addressed the need for a close cooperation between the two instructors for more effective EAOP instruction, they also did not provide suggestions or ideas as to how and to what extent they should collaborate in the course of designing and carrying out the EAOP courses or curriculum.

Gaps identified in EAOP education. This synthesis identified gaps involved in the previous studies and examined how the studies dealt with the discrepancies. The first gap was different perceptions of English language needs among EAOP stakeholders. Ulucay and Demirel's (2011) study clearly showed that there are significant gaps in three different groups' perceptions of English needs, English instructors, professionals, and students, in the field of logistics. Regarding teaching techniques for EAOP instruction, for example, despite professionals and instructors' agreement on the effectiveness of the communicative teaching approach, students were not willing to participate in the activities. In addition, in terms of content of the tests, professionals claimed that spoken interaction should be evaluated whereas English instructors considered reading skills as more important than other skills. Taillefer (2007) also addressed the different perspectives between current students and graduates on the language course. Although graduates strongly recommended integrating language into the economics course, current students had lower desire for integration. Moreover, while economics graduates felt that it is necessary to have high levels of all four skills, the students considered reading, writing, and listening skills as professionally less important.

The next, and perhaps most significant, gap was the differences between English language that students learned in EAOP classes and that used in the real workplace. Wang and Sun (2014) found that the hotel employees have a higher level of English proficiency than that of fourth-year students in hotel-related departments, and the employees were more confident in English skills compared to the students. The study also showed that the skills taught in EAOP courses and those required in the hospitality industry are different. Regarding the results, the researchers concluded that these gaps resulted from the lack of industry discourses taught in university courses. Liton (2015) also identified that the existing EAOP course does not deal with situational lessons that are related to the students' future workplace and concluded that the courses should be redesigned to cope with learners' language use in the future workplace.

The third is stakeholders' different perceptions of students' English language proficiency. Three studies (Antic & Milosavljevic, 2016; Bacha & Bahous, 2008; Jackson, 2005) showed that students generally consider that the level of their English proficiency is higher than the level perceived by professionals or employ-

ees. In Bacha and Bahous' (2008) study, instructors teaching business courses perceived that the students have a considerably lower level of English language abilities than the level that the students think. In addition, while the faculty argued that the students' English language is not satisfactory, the students considered their skills as more than satisfactory. Antic and Milosavljevic (2016) also argued that there are more medical students who consider their English proficiency as advanced compared to the number of the doctors. In this way, the studies showed that there are significant gaps in how EAOP stakeholders, students versus instructors or professionals in particular, consider the students' English proficiency.

The three categories of discrepancies identified in this synthesis provides an overall challenge for EAOP-related stakeholders including practitioners and curriculum designers: it is about how the widely varied views can be resolved and reflected effectively in an EAOP course. Rather than concluding the studies with a general suggestion that EAOP courses should be designed based on language learning needs, more serious, but realistic, consideration should be made to answer the question.

Four skills versus a particular skill(s). Another conflicting issue included in the empirical studies is regarding whether EAOP courses should cover all four language skills (reading, writing, listening, and speaking) or focus on a particular skill(s) that is considered the most important or the most frequently used in a particular field. Three studies (Antic & Milosavljevic, 2016; Mazdayasna & Tahririan, 2008; Taillefer, 2007) argued that EAOP courses or curricula need to develop students' four skills. On the other hand, there are studies claiming that a particular skill(s) should be given more attention (Pattanapichet & Chinokul, 2011; Ulucay & Demirel, 2011; Wang & Sun, 2014). In case of Ulucay and Demirel (2011) and Wang and Sun (2014), in particular, although they generally acknowledged the importance of dealing with four skills, they emphasized that there are particular skills that are considered more important in the specific disciplines and professions, and EAOP courses should focus mainly on improving the skills.

Regarding this issue, Dudley-Evans and John (1998) state that although some scholars (e.g., Hutchinson & Waters, 1987) criticize that focusing on one particular skill is limiting, and other skills also should be considered to enhance per-

formance in the target language, monoskill ESP courses have been successful in many countries. However, it seems that the issue of 'all four skills vs a particular skill(s)' may not be a matter of selecting between the two. Instead, through reviewing and synthesizing the empirical studies, it has been identified that the studies dealing with the same discipline do not necessarily emphasize the importance of or the need for the same language skills. In the cases of Bacha and Bahous (2008) and Liton (2015) who discussed ESP for business students, for example, Liton (2015) argued that strong attention should be paid to listening, speaking, and writing skills, whereas Bacha and Bahous (2008) focused particularly on writing. In addition, the previous studies implied that a variety of variables, such as language learning context, characteristics and language proficiency of students, workplace situations, and researchers' interest in particular (or general) skills, are involved in the decision of which skills EAOP courses should focus on.

Directions for EAOP education and future research

Based on the above results, this research synthesis suggests some directions for instruction and future research for EAOP education in university contexts. First, considering that the majority of the previous studies were conducted in a few specific Asian countries and were limited to particular research focuses and professional fields, more studies dealing with various topics should be carried out in a wide variety of EAOP educational contexts. Second, regarding a wide variety of perceptions of students' language needs among EAOP stakeholders, it is necessary to coordinate various opinions through constant negotiations between them and improve EAOP courses and curricula based on the consensual or adjusted ideas. In addition to this, further research should be conducted regularly in order to examine the effectiveness and weaknesses of the courses designed based on the negotiations made among the stakeholders. Third, in terms of the issues of specificity of ESP and integration of four language skills, even the studies dealing with the same academic discipline showed different language learning needs for students involved in different learning contexts. These results may imply that EAOP courses and curricula should be developed appropriate to the specific learners by considering a variety of variables such as particular language learning settings, students' characteristics and English language proficiency, particular workplace environments, and English skills required in the workplace. Further researchers

also need to focus on investigating what other variables are involved in EAOP education. Fourth, although it is important to develop EAOP courses based on the various factors, it seems necessary to communicate and exchange information on the courses among stakeholders engaged in the same discipline. As described in Antic and Milosavljevic's (2016) study, students need EAOP instruction because after graduation, they often face situations where they need to participate in international conferences, seminars, or discussions in English with colleagues abroad. The EAOP courses tailored only to a particular group of students in a specific context may prevent the students from successfully engaging in those situations. Therefore, ESP practitioners involved in the same discipline need to constantly exchange information on subject content, English language, courses, materials, and evaluation methods while also developing specific EAOP programs and courses appropriate to their students.

Conclusion

Based on the understanding that the dichotomy between the two subfields of ESP (EAP and EOP) may widen the gap between the academy and the workplace (Zhang, 2013), the synthesis began with the question of how ESP instruction bridges the two areas and what issues are involved regarding the hybrid form of English instruction. By analyzing 16 empirical studies dealing with the concept of EAOP education, the research synthesis revealed major findings as follows. First, EAOP education in university settings has been more actively examined in the fields of engineering and business. Next, regarding the focus of research, needs analysis was the most frequently investigated topic, followed by perceptions of students' English. In terms of research context, although research on EAOP education has been mostly conducted in Asian countries including Middle Eastern countries, they were also heavily limited to a few specific countries. This synthesis also identified some debatable but important issues included in the studies: 'generality vs. specificity' of the courses, different perceptions on and needs for EAOP instruction among stakeholders, collaboration between instructors of language and subject content, and 'four skills vs. a particular skill(s).'

In addition to these findings, this research synthesis also found some weaknesses that should be considered more in terms of EAOP instruction and research.

First, although the studies generally agreed that two areas of the English language and subject content should be integrated into EAOP courses, the studies raise a question of how and to what extent the two different disciplines should be integrated. The next issue is related to the consideration of learners' needs when designing and implementing EAOP courses. As revealed in some of the studies, current students tend not to recognize their English proficiency or language learning needs appropriately. This result also provides a question of whether and how to include students' perceptions or needs in EAOP courses. Third, regarding EAOP-related stakeholders' different views on English learning needs, how the different and sometimes conflicting perceptions can be reconciled and reflected in EAOP instruction needs further discussion and analysis.

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