Needs Analysis for Developing a Teaching Speaking Module for Chinese EFL Business English Undergraduates from the Teachers' Perspective: Assessing the Validity and Reliability

Hu Ke & Asmaa AlSaqqaf
Universiti Malaysia Sabah, Malaysia
Corresponding Author Email: asma3030@ums.edu.my

Abstract
A dearth of research has carried out to identify the learning and target needs in oral business English (OBE) courses for Chinese EFL undergraduates from the perspectives of teachers. Furthermore, assessing the validity and reliability of the needs-analysis instruments has been neglected, though needs analysis is considered as one of the major concerns in teaching English for specific purposes (ESP). Accordingly, this study aims at investigating the content validity, construct validity, and reliability of the research instrument. Based on the rigorous review of previous literature, the researchers determined the prospective constructs and questionnaire items that attribute to the measurement of Chinese EFL students' needs in OBE courses as perceived by teachers. The content validity of the Chinese EFL students' needs questionnaire containing 17 items based on a 5-point Likert scale was examined by three Ph.D. holders with expertise in ESP fields. For data collection, a total of 36 teacher respondents from Business English department involved in the study. Exploratory Factor Analysis (EFA) was utilized to examine the construct of the questionnaire where a total of three constructs have been extracted: i) perceived teaching of speaking, ii) perceived performance of students, iii) perceived use of materials with the factor loading ranging from 0.448 to 0.972. In terms of instrument reliability, Cronbach's alpha (α) fell in a range of 0.80 to 0.90, which indicates a high level of reliability. It is hoped that the results of this study could be insightful to developing research instrument for ESP studies.
Keywords: Oral Business English, Chinese EFL Learners, Needs Analysis, Exploratory Factor Analysis, Reliability, Instrument Development

Introduction
Teaching English for Specific Purposes (ESP) has ramped foreign language education in Chinese higher learning for decades since the urge of the cultivation of bilingual talents in business fields. However, the sequential outcomes of ESP education have not been satisfactory as observed by many reasons, such as the imbalanced development of teachers' professional growth and curriculum development of business English (Lu, 2021), one-

pedagogical teaching method in business English education (Zeng, 2019), and inadequate attention paid to stakeholders' needs analysis while teaching (e.g., Li & Fu, 2021; Lou, Li & Zhao, 2020; Zhang, 2018). To address the issues identified in previous literature, one of the solutions is to refine the existing curriculum by developing a tailored teaching module with an initial focus on needs analysis (Chostelidou, 2010; Park, 2021).

Given that, needs analysis is regarded as a useful method to measure students' wants, and needs in language skills acquisition (Kosimov, 2021). Needs analysis in the current study is defined as teachers' perceptions on analysis for Chinese EFL business English undergraduates' needs in oral business English (OBE) courses in terms of learning needs and target needs. Although it is normally believed that the indicator of understanding and analyzing students' needs generated from the students themselves has been widely and successfully examined in educational research globally (e.g., Zhang, 2013; Mognhode & Woldemariam, 2015, Leotta & Dolidze, 2022). However, it is unsure that whether the students' self-feedback about their needs alone can be truly and thoroughly addressed in terms of lacks, wants and gaps in language learning. It is imperative to do an analysis of students' needs thoughtfully from the standpoint of relevant stakeholders, such as teachers.

Therefore, it first outlines a theoretical framework of needs analysis that illustrates the rationales behind the measure, then followed by the needs analysis questionnaire adapted by relevant literature for the exploration of validity and reliability for students' needs perceived by business English teachers' perspective in this study, while it could also be beneficial for future studies on a large-scale investigation on students' needs analysis raised by teachers using the validated questionnaire.

Literature Review
The ensuing literature review will focus on two areas: the theoretical framework of needs analysis and the importance of validity and reliability for research instruments. These sections will offer an in-depth understanding of the subject matter.

Theoretical Framework of Needs Analysis
Needs analysis is vital for consolidating the quality of English language teaching (ELT), yet it relies on the depth of understanding of these underlying needs (Waters & Vilches, 2001). Hutchinson and Waters (1987) proposed a needs analysis model, which is characterized by two aspects: i) learning needs and ii) target needs. In detail, learning needs are concerned with what learners expect to do to learn while target needs are defined clearly as necessities, lacks, and wants in learning. Moreover, numerous studies have been conducted using the Hutchinson and Waters' (1987) model to investigate the needs analysis of relevant groups. Hu, AlSaqqaf, and Jawing (2022) proposed developing a teaching speaking module for Chinese EFL business English undergraduates, utilizing a needs analysis questionnaire to collect data on target and learning needs is proposed to be distributed to the undergraduates majoring in business English on national scale. Likewise, Watanapokakul (2022) developed an English for management course in Thailand, gathering data from 159 English major students and 15 stakeholders through questionnaires and semi-structured interviews. The outcomes provide instructional insights applicable in course development. As mentioned above, a noticeable emphasis has been placed on the significance of needs analysis in educational settings, demonstrating the diverse applications of it in language learning and curriculum development in ESL and EFL settings.

The Importance of Validity and Reliability for Research Instruments

Testing reliability and validity are two critical aspects when evaluating measurement methods for data collection in research (Cohen, Manion, & Morrison, 2018). Creswell (2012) emphasizes the importance of validity and reliability in assessing research instruments in general, and the measurement of questionnaires in particular. Both tests are crucial for ensuring the quality of research results considering the nature underpinning them (Creswell, 2012). Moreover, Gay, Mills and Airasian (2012) defined the term of validity as what an instrument expects to measure and how accurately it does so. Among validity assessments, the major priority has always been placed on content and construct assessments. Content validity refers to the extent to which a measurement tool reflects the construct it is intended to measure and has considerable impact on questionnaires (Gay, et al., 2012). In assessing the latent factors that underlie different measuring constructs of instruments, factor analysis is a commonly utilized method for construct validity in research (Pallant, 2020). However, reliability analysis is to cope with the accuracy of the data gathered and the degree to which a measurement tool minimizes random error (Creswell, 2012).

Consequently, many studies concerned with the development of instruments used in research have been focusing on testing their instruments' validity and reliability. Yasar and Cogenli (2014) conducted a study by examining 12 articles and 38 theses focused on evaluation program in Turkey. Findings revealed prevalent use of content validity for validity assessment and the Cronbach Alpha coefficient for reliability. Many inventories lack both validity and reliability studies, resulting in an inadequacy in program evaluation research in Turkey. Moreover, Rozali, Puteh, Yunus, Hamdan and Latif (2022) carried out a study focusing on developing and validating an instrument for Malaysian students. The use of questionnaire as the instrument was validated and then distributed to 35 students from public universities in the Malaysian context. Cronbach's alpha of 0.96 indicated high reliability. Among 30 shuffled items, 5 were discarded and 15 modified, 10 redundant items fixed, and another 10 items eliminated, resulting in 82 items in the final validated version. Similarly, Hashim and Taat (2022) aimed to develop and validate an assessment tool for evaluating student engagement in Malaysian prison schools with 432 students participated. The resulting instrument comprises 4 constructs, factor analysis confirmed validity and reliability, with 55 items in the final instrument.

Besides, research focusing on instrument development and validation can be also seen in other fields. For instance, Lanario et al. (2020) conducted a study in the medical sector to assess health-related quality of life in severe asthma patients. The use of questionnaire dealing with severe asthma underwent refinement in this study using EFA. Analyzing data from 460 patients across six UK severe asthma centers, the study revealed a three-factor solution within the instrument, reflecting distinct aspects of severe asthma's impact on patients, including various life activities, emotional effects, and so on. Moreover, Dabbagh, Seens, Fraser and MacDermid (2023) conducted a study employing EFA to uncover the underlying constructs within a questionnaire measuring home and family work roles and 314 participants were sampled to respond to it. EFA confirmed a three-factor construct while the questionnaire and individual questions exhibited strong internal consistency.

In short, the use of instruments stands as a valuable contribution to enhancing and supporting research quality in such environments because of the rigorous validation process of the instruments underwent. Furthermore, when it comes to the current study, content validity by experts, construct validity by EFA and Cronbach's alpha (α) by reliability are addressed respectively for measuring needs of the Chinese EFL business English undergraduates from teachers' perception. Due to this, this study intends to examine the

validity and reliability of the instrument, a questionnaire of students' needs analysis for teacher use regarding OBE courses in Chinese tertiary level.

Methodology
This section is divided into three parts: research approach and research design, participants and sampling technique, and research instrument. Each part is discussed in detail to provide a comprehensive understanding of the research methodology employed in this study.

Research Approach and Research Design
This research employs a quantitative research approach, utilizing a cross-sectional design (Cohen et al., 2018). Data collection is conducted through a needs analysis questionnaire, and subsequent statistical analyses (I.e., descriptive statistics, reliability, and EFA) are applied to the gathered data. A four-stage design is adapted by the study in alignment with the framework of Park, Yoon, Yun, and Park (2017), there are several stages involved in developing a validated instrument, including i) developing instrument, ii) conducting pilot study, iii) the implementing a study to assess reliability and validity, and iv) translating from the source language to the target language. Due to the research constraints (e.g., time, access to resources, etc.), the current study places a greater emphasis on the third phase than the other three phases. Given that, only the items reach the prerequisite of validity and reliability can be kept for further endeavors.

Participants and Sampling Technique
A purposive sampling technique was used to collect data. This non-probability sampling method allows researchers to select participants based on their judgment and interests, which can provide rich and detailed information (Cohen et al., 2018). The sample of this study consists of 36 participants (32 females and 4 males) who are instructors teaching business English at university level in China. These subjects were chosen as sample participants because they are identical with the other participants on large-scale research to be conducted sequentially, that is, they are teachers working for the department of Business English at Chinese universities. At least 30 subjects are recommended by Johanson and Brooks (2010) as the threshold value for preliminary data collection or scale development in the pilot test.

Research Instrument
Reviewing relevant previous literature was first administrated to obtain existing questionnaire items related to needs analysis for business English, which constituted the initial measurement of items using online search engine. Keywords used for search purpose included needs analysis, learning needs, target needs, teachers' perceptions towards teaching of speaking, materials, curriculum, and students' performance in business English learning.

The final selected questionnaire items were adapted from Cunningham (2015), it was originally about the needs analysis for English language skills. More specifically, Cunningham's (2015) questionnaire measuring ESP employed a 4-point scale (1=strongly disagree, 4=strongly agree) with 27 items, divided into four constructs to investigate teachers' perceptions of students' ESP needs. These four constructs comprised of the course (3 items), the materials (5 items), the students (5 items), and teaching reading, writing, and grammar (9 items), providing a comprehensive exploration of the needs in ESP. This study made several refinements to the original questionnaire developed by Cunningham (2015). Firstly, it increased the degree of item specificity, for instance, modifying the item "*The students are*

motivated and interested." to "*The students are motivated and interested in speaking English.*" to align better with the context of the study. Secondly, researchers reassigned items, with "*The course serves the students' professional and academic needs.*" initially in the construct of the students but deemed more appropriate in the construct of the course. Lastly, to reduce the length of questionnaire and enhance accuracy, some items unrelated to the research context were removed, such as "*I often connect my writing lessons with material from my reading lessons.*" These improvements and eliminations were aimed at better addressing the research objectives. As a result, after screening the items, 10 out of the original 27 items in the questionnaire were excluded from this study. The remaining 17 items were retained and appropriately modified for use in this research.

When it comes to items used for this study, all items were positively worded to maintain the accuracy of the results generated by considering individual difference based on their cognitive competency in reading comprehension and their level of studies (Weem, Onwuegbuzie & Collins, 2006; Weem, Onwuegbuzie & Lustig, 2003; Schriesheim & Hill, 1981). In this study, all respondents are master's degree holders, and the ways they comprehend the items given are different. Moreover, a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree) was employed with appropriate font size and surface design for the questionnaire. Moreover, the questionnaire was first turned into a bilingual version (from English to Chinese) within framework of Dörnyei and Taguchi (2010) back-translation method by two certified translators in checking the equivalence of the two versions. After that, the questionnaire was revised based on the suggestions of three experts in applied linguistics (all Ph.D. holders) to ensure equivalence of professionalism and linguistic requirements. Furthermore, the pilot study was performed with 32 participants to examine the total-item correlation to identify the items with low correlation relationship, however, they were all correlated and retained for further use.

Data Analysis and Results
This study aims to measure the validity and reliability of a needs analysis questionnaire used by Chinese EFL business English teachers. To comprehensively test the instrument and obtain the results, the study conducted three types of validity: a) content validity, b) face validity, and c) construct validity to ensure that the instrument measures what it is intended to measure. Moreover, the study also used Cronbach's alpha to test the reliability of instrument.

Content Validity
Content validity is the degree to which an instrument measures comprehensiveness of the construct it is designed to measure, which should be determined by experts (Gay, et al., 2012). In this study, the content validity of this study was assessed by three experts, including two from Malaysia and one from China. These three experts all hold doctoral degrees and have rich research experience in the field of applied linguistics, covering areas such as general English (GE) and ESP teaching, curriculum development in ELT, and cognitive linguistics. In examining content validity, A form measuring the content validity for questionnaire on a three-point scale (e.g., 1=poor, 2=average, and 3=good) was utilized by these three experts based on the criteria of the relevance and suitability of the items. Consequently, three experts reached an agreement that the use of instrument has demonstrated the relevance and applicability of the questionnaire items in the context of this study, meeting the standards for content validity (see Table 1).

Table   1
Results of Content Validity by Experts

Criteria	ME1	ME2	CE1
Relevance of each item to the measured construct	3	3	3
Appropriateness of grammar	3	3	3
The clarity and unambiguity of items	3	3	3
The speaking of words	3	3	3
The structing of sentences	3	3	3
The structure of the instrument in terms of construction and format	3	3	3

*ME: Malaysian Expert, CE: Chinese Expert

After appropriate modifications, such as adjusting the wording and Chinese translation to certain words, these items could be suitable for use in subsequent investigation. This indicates that the questionnaire exhibits strong content validity in measuring the factors of interest, making it reliable for research purposes.

After that, the instrument was ready for the face validity as explained in the next section.

Face Validity
Face validity is the subjective assessment of whether a test appears to measure what it is intended to measure (Gay, et al., 2012). To assess the face validity of the instrument responded by teachers regarding the needs of OBE course for business English undergraduates, three Chinese EFL Chinese business English teachers, who were similar to the actual participants, were asked to review the questionnaire. All three teachers confirmed that the questionnaire was well-organized and could be used to assess and analyze students' needs from teachers' perspectives. Their endorsement further reinforces the quality of the questionnaire. However, the researchers made minor refinements, such as clarifying ambiguous phrasing, based on the feedback received during the face validation session. Therefore, the instrument could be further evaluated for construct validity in the following section.

Construct Validity
This section assessed the construct validity of the instrument. Construct validity, as defined by Gay et al. (2012), measures whether an instrument truly measures the concept or construct it claims to measure. In this study, the researchers asked the 36 teacher participants to respond to the needs analysis questionnaire using a 5-point Likert scale in the actual study. The collected data were analyzed using descriptive statistics and factor analysis as follows.

Descriptive Analysis for Needs Analysis Questionnaire Items
Table 2 includes mean scores, standard deviations, and initial codes for each item's corresponding items. The values of standard deviation (Std. D) represent the variety in responses, whilst the mean scores represent the students' needs analysis based on the perceptions of Chinese EFL business English teachers for each item.

Table   2

Descriptive Results of Students' Needs Analysis Perceived by Chinese EFL Business English Teachers

Code	Item	Mean	Std. D
Target Needs			
PTS1	Overall, it's easy to make speaking lessons interesting.	2.72	0.944
PTS2	I often include activities that improve students' motivation in speaking.	3.61	0.934
PTS3	I often include activities that can cultivate speaking fluency and accuracy in teaching speaking.	3.33	1.042
PTS4	I provide numerous opportunities for my students to speak.	3.28	0.944
PTS5	I think vocabulary development is important to business English speaking lessons.	4.00	0.823
PTS6	I think teaching grammar is essential for my students to succeed in speaking skills for business English.	2.67	0.926
PPS1	The students are motivated and interested in speaking English.	2.25	0.874
PPS2	The students frequently participate in assigned activities in class.	2.89	0.854
PPS3	The students find the use of materials for speaking interesting.	2.67	1.014
Learning Needs			
PUM1	The provided materials for speaking skills are interesting.	2.83	0.811
PUM2	The provided materials can be used with ease.	3.15	0.762
PUM3	The provided materials are appropriate for the current level of students and course objectives.	3.47	0.774
PUM4	I often develop my own materials while teaching speaking skills.	3.11	1.036
PUM5	Finding appropriate supplementary materials for teaching speaking is easy.	2.81	0.920
PCE1	The goals and objectives of business English speaking course are clear and appropriate.	3.78	0.866
PCE2	The course of business English speaking adequately prepares the students for promising future development.	3.50	0.811
PCE3	The course of business English speaking serves the students' professional and academic needs.	3.56	0.939

*PTS: Perceived Teaching of Speaking, PPS: Perceived Performance of Students, PUM: Perceived Use of Materials PCE, Perceived Course Experience

Factor Analysis for Construct Validity

As forementioned, Exploratory Factor Analysis (EFA) and Cronbach's alpha (α) were employed in the study for data analyses with different purposes (i.e., construct validity and reliability, respectively) in SPSS 28. For the suitability of the factor analysis, the values of Kaiser's Measure of Sampling Adequacy (0.628, >0.6) and Bartlett's Test of Sphericity (p<0.05, 0.001)

were tested, and the values of communality achieved above 0.2, from 0.366 to 0.872 (Child, 2006). Therefore, all requirements were fulfilled prior to testing factor extraction using eigenvalues greater than 1 (see Table 2) and scree plot for visual inspection (Figure 1), while factor rotation was examined using Principal Component Analysis and Oblimin with Kaiser Normalization in 10 iterations (see Table 3).

Table   3
Factor Extraction for Students' Needs Perceived by Chinese EFL Business English Teachers

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6.019	35.408	35.408
2	2.607	15.338	50.746
3	1.979	11.639	62.385
4	1.081	6.357	68.741
…	…	…	….
17	0.045	0.266	100.000
Extraction Method: Principal Component Analysis			

Four components, as shown in Table 3, have eigenvalues that are greater than 1. The researcher fixed the requirement of factor extraction to the value of three based on the predetermined needs of the research to ensure that only the first three components with eigenvalues greater than one were used for the following analyses, even though there are essentially four components after extraction.
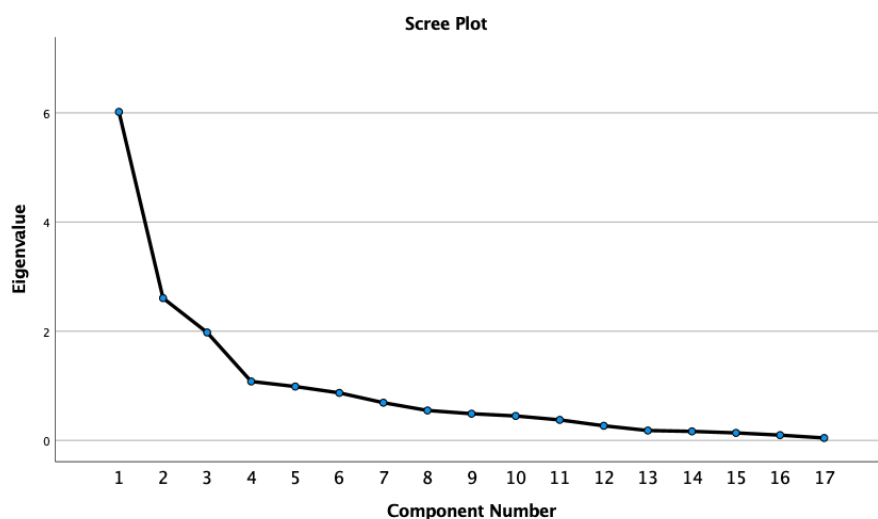

Figure 1
Scree Plot of Items Used for Measuring Students' Needs Perceived by Chinese EFL Business English Teachers

The scree plot was then used to extract factors and ensure that their eigenvalues were still plotted above the elbow and on the curve line (see Figure 1). The eigenvalues above the elbow were kept because these components, based on their relative variances, provide the best explanation of the data.

Table 4

Factor Loading of Students' Needs based on Chinese EFL Business English Teachers' Perception

Pattern Matrix	Component		
Items	1	2	3
I think vocabulary development is important to business English speaking lessons. (PTS5)	0.972		
The course of business English speaking serves the students' professional and academic needs. (PCE3)	0.877		
The course of business English speaking adequately prepares the students for promising future development. (PCE2)	0.793		
The goals and objectives of business English speaking course are clear and appropriate. (PCE1)	0.788		
I often include activities that improve students' motivation in speaking. (PTS2)	0.705		
I provide numerous opportunities for my students to speak. (PTS4)	0.613		
I often include activities that can cultivate speaking fluency and accuracy in teaching speaking. (PTS3)	0.545		
I think teaching grammar is essential for my students to succeed in speaking skills for business English. (PTS6)	0.519		
The students are motivated and interested in speaking English. (PPS1)		0.947	
The students frequently participate in assigned activities in class. (PPS2)		0.902	
The students find the use of materials for speaking interesting. (PPS3)		0.871	
Finding appropriate supplementary materials for teaching speaking is easy. (PUM5)			0.816
The provided materials for speaking skills are interesting. (PUM1)			0.814
The provided materials are appropriate for the current level of students and course objectives. (PUM3)			0.776
The provided materials can be used with ease. (PUM2)			0.687
I often develop my own materials while teaching speaking skills. (PUM4)			0.604
Overall, it's easy to make speaking lesson interesting. (PTS1)			0.448
Extraction method: principal component analysis.			
Rotation method: Oblimin with Kaiser Normalization.			
a. Rotation converged in 10 iterations			

PTS: Perceived Teaching of Speaking, PCE: Perceived Course Experience, PPS: Perceived Performance of Students, PUM: Perceived Use of Materials

Based on the factor rotation results presented in Table 4, three distinct components emerged, each with loadings exceeding 0.3, and no items exhibited crossing loadings. However, a reevaluation of the item arrangement was necessary due to the initial setup.

Upon closer examination of the items, it became evident that items from PTS2, 3, 4, 5, 6, as well as PCE1, 2, 3, formed a cohesive cluster. This grouping was informed by the fact that all eight items pertained to teachers' perceptions regarding the teaching of speaking, such as PTS2 (*I often include activities that improve students' motivation in speaking.*) and PCE1 (*I think the goals and objectives of the business English speaking course are clear and appropriate.*). Consequently, these items were consolidated and labeled as "teachers' perceptions towards teaching of speaking." Furthermore, PTS1 (*Overall, it's easy to make speaking lessons interesting.*) was merged with items from PUM, a construct assessing teachers' perceptions of materials and their associated practices. PTS1 encapsulated the overarching practices related to teaching speaking within the OBE course.

Table 5
Factor Loading of Students' Needs Perceived by Chinese EFL Business English Teachers after Relabeling the Constructs

Pattern Matrixa	Component		
Target Needs			
Construct: Perceived Teaching of Speaking	1	2	3
I think vocabulary development is important to business English speaking lessons. (PTS1)	0.972		
The course of business English speaking serves the students' professional and academic needs. (PTS2)	0.877		
The course of business English speaking adequately prepares the students for promising future development. (PTS3)	0.793		
The goals and objectives of business English speaking course are clear and appropriate. (PTS4)	0.788		
I often include activities that improve students' motivation in speaking. (PTS5)	0.705		
I provide numerous opportunities for my students to speak. (PTS6)	0.613		
I often include activities that can cultivate speaking fluency and accuracy in teaching speaking. (PTS7)	0.545		
I think teaching grammar is essential for my students to succeed in speaking skills for business English. (PTS8)	0.519		
Construct: Perceived Performance of Students			
The students are motivated and interested in speaking English. (PPS1)		0.947	
The students frequently participate in assigned activities in class. (PPS2)		0.902	
The students find the use of materials for speaking interesting. (PPS3)		0.871	
Learning Needs			
Construct: Perceived Use of Materials			
Finding appropriate supplementary materials for teaching speaking is easy. (PUM1)			0.816
The provided materials for speaking skills are interesting. (PUM2)			0.814

The provided materials are appropriate for the current level of students and course objectives. (PUM3)	0.776
The provided materials can be used with ease. (PUM4)	0.687
I often develop my own materials while teaching speaking skills. (PUM5)	0.604
Overall, it's easy to make speaking lesson interesting. (PUM6)	0.448

Extraction method: principal component analysis.
Rotation method: Oblimin with Kaiser Normalization.
b. Rotation converged in 10 iterations

As shown in Tables 4 and 5, before conducting the factor analysis, the scale measuring Chinese EFL business teachers' perception of students' needs analysis encompassed four constructs: perceived teaching of speaking (PTS), perceived course experience (PCE), perceived performance of students (PPS), and perceived use of materials (PUM). Following the factor analysis, these constructs were refined, ultimately resulting in three revised constructs: perceived teaching of speaking (PTS), perceived performance of students (PPS), and perceived use of materials (PUM).

Cronbach's Alpha (α) Test for Reliability
Based on the results of factor analysis, the initial questionnaire items were reclassified and combined. Subsequently, the Cronbach's alpha (α) was conducted for the determination of internal consistency reliability for the revised items. A cut-off value of 0.70 was employed as the threshold for an acceptable level of reliability (Cortina, 1993; Creswell, 2012).

Table 6
Items Used for Measuring Students' Needs Perceived by Chinese EFL Business English Teachers

Cronbach's alpha (α) before EFA (n=17, overall coefficient: 0.88)		Cronbach's alpha (α) after EFA (n=17, overall coefficient: 0.88)	
Perceived Teaching of Speaking	PTS (6 items) 0.81	Perceived Teaching of Speaking	PTS (8 items) 0.89
Perceived Course Experience	PCE (3 items) 0.83	Perceived Performance of Students	PPS (3 items) 0.90
Perceived Performance of Students	PPS (3 items) 0.90		
Perceived Use of Materials	PUM (5 items) 0.79	Perceived Use of Materials	PUM (6 items) 0.80

In the construct named perceived teaching of speaking (PTS), the reliability increased from 0.81 to 0.89 after adding 2 items from the construct labelled perceived course experience (PCE). Similarly, in the construct of perceived use of materials, the reliability improved from 0.79 to 0.80 with the addition of 1 item from the construct of perceived course experience (PCE) as well. As for the construct of perceived performance of students (PPS), its reliability remained unchanged at 0.90 before and after the factor analysis performed. All constructs

maintained their reliability while remaining the overall Cronbach's (α) of the questionnaire unchanged at 0.88, demonstrating their reliability at an acceptable level.

Discussion

To improve quality of business English education and advance students' academic and practical skills, it is essential to conduct a needs analysis of business English undergraduates. However, there are few applicable resources for evaluating students' needs in terms of OBE in Chinese application-oriented institutions of higher learning in private sector, with large attention paying to the growth of college English education (for non-English majors) in application-oriented public colleges and universities (Song & He, 2019). Chinese universities are further characterized by research-oriented, application-oriented, and vocational-oriented educations (Liu & Wang, 2010), they differ from higher education systems in other countries, sticking to the path of socialist education with Chinese characteristics by adhering to the socialist direction (Mai, Ha, Nguyen, Khieu, Nguyen & Vu, 2019). However, the current instruments only partially capture the facet of business education in Chinese application-oriented colleges and universities.

Initially, the content validity assessment was examined by three, indicating good quality of content. This is noticed that prior to developing a questionnaire for the study, researchers typically underwent an in-depth review of relevant literature and theoretical frameworks within the field of interest, which was the threshold of conducting a study. This process ensures a comprehensive understanding of the constructs the researchers intend to measure, and this certain perception of knowledge is essential for determining the significance and relevance of the questions within the field (Webster & Watson, 2002; Holmes, 2023). Besides that, the development of the questionnaire was in alignment with the research objectives and research questions proposed in the study. In other words, the content of the questionnaire must directly relate to the constructs or interest under study. This alignment ensures that the questionnaire can provide valuable information about the research questions (Hinkin, 1998). Given that, the validity assessment of the developed instrument demonstrates robust standard.

When it comes to construct validity of questionnaire, it is confirmed using EFA, where the three-construct instrument accounts for 62.384% of the total variance. The results of this study indicate that the construct of perceived teaching of speaking, as the first component extracted in EFA, explains a significant portion of the total variance (35.408%). This suggests that teachers' perceptions towards teaching of OBE are crucial for improving the speaking needs among Chinese EFL business English undergraduates. It is believed that conducting a series of training to enhance the understanding of business English teachers regarding OBE education should be taken into account by stakeholders. This aligns with the findings of previous literatures, among various factors such as teaching materials and student performance, the teachers' perspectives on business English teaching that significantly correlate with needs analysis for speaking proficiency development (Chen & Goh, 2014; Dai & Yang, 2016; Xie, 2019; Taat, Abdulbaki & AlSaqqaf, 2020).

As for the second construct, perceived performance of students, three items with the high values of factor loading (0.871-0.947) were included to measure the aspects of students' attitude, engagement perceived by teachers. It is believed that the level of students' motivation, and interest in learning language skills, especially speaking proficiency (Wilona, Ngadiman, & Palupi, 2010; AlSaqqaf, Zhang & Sharif, 2023), is correlated with the activities, students' engagement and suitability of materials use to the speaking instructions when

assessing students' performance (Dahliana, 2019; Jiwandono, 2021). It is assumed that the learning experience is coherent, engaging, and conducive to language acquisition, ultimately leading to more accurate and meaningful assessments of students' speaking abilities. Similarly, Zhang (2022) justified that successful language acquisition is facilitated by immersing learners in certain learning objectives, tasks, and context related to the target language.

In addition, the availability and accessibility of supplementary materials serve as a crucial resource for business English teachers to compensate for any inadequacies in the provided materials. This ensures the enrichment of course content and prevents students from losing interest in learning OBE course due to dissatisfaction with the materials (Indrianti, 2019). Given that OBE instruction differs from general spoken English instruction, the materials should be more practical and up-to-date, teachers should take an active role to provide students with a strong sense of confidence for their future careers in relation with rapid changes of the business world. It is assured that proactive teachers can synthesize the diverse means to obstacle the tedious learning effects (Thakur, 2015; Joannes & AlSaqqaf, 2023).

Moreover, the internal consistency reliability is highly supported, with a Cronbach's alpha coefficient of 0.877 (e.g., Hu, AlSaqqaf, & Swanto, 2020; Rozali et al., 2022). This is probable because such a questionnaire in the study developed by available literature is frequently based on existing knowledge from the relevant field of research (Bork & Francis, 1985; Hyman, Lamb & Bulmer, 2006). This means that these established questionnaires may have been designed with the foundation of literature reviews, leading them to some extent be reliable. Moreover, another justification is that the researchers used existing items from the published literature with minor modifications to better fit their specific research context. These modifications are usually made with the aim of maintaining or even improving the reliability of the questionnaire (Avrech Bar, Rubin, Gavrieal-Tyjchman & Jarus, 2013; Zoë, 2017). Lastly, the consistent measurement of the same construct over time and across studies contributes to high reliability. As for the current use of items in the study was extracted from the original instrument by Cunningham (2015), an acceptable value of a Cronbach's alpha coefficient was obtained (α=0.83). Therefore, all these forementioned issues probably contribute to the high reliability of the items used in the study.

Conclusion

This study carried out needs analysis for English language learning as a starting point to develop a feasible instrument for assessing students' needs in OBE course perceived by teachers. The validity and reliability of the questionnaire adapted from previous literature have been confirmed and can be used ideally for the business English curriculum development. This study demonstrates how to measure the needs analysis of relevant stakeholders to facilitate and enhance the development of business English education in Chinese universities. Accordingly, this study presents a few theoretical and contextual contributions. (a) The developed and validated instrument could help in expanding the theoretical application of Hutchinson and Waters' (1987) needs analysis framework within a Chinese context. (b) To some extent, a contribution has been added to the extant literature of needs analysis for business English education in Chinese EFL context considering measuring scale development in bilingual studies. (c) It could assist in determining the factors that influence the perceived needs of students as seen by Chinese EFL business English teachers conducting OBE instruction, thereby enhancing the quality of OBE courses for business English

education. (d) It could aid in exploring the relationships between the levels of needs associated with OBE instruction and the learning outcomes of students. (e) It could offer guidelines for Chinese ESP education and practice, such as developing additional areas of focus for teachers to improve their awareness of curriculum development. Ultimately, these contributions could lead to an improvement in the speaking proficiency and career growth of EFL business English undergraduates, particularly in handling business scenarios.

Yet, this study also has its limitations. One of the limitations is the methods used (i.e., content validity, EFA and reliability analysis). These methods are not suitable for testing the theoretical foundation (Orçan, 2018). Therefore, it is recommended that future research may utilize Confirmatory Factor Analysis (CFA) to complement and deepen the understanding of business English needs analysis and OBE, as well as other English language skills (e.g., Shia, Mansor & Majid, 2023). Moreover, the generalization of these results is subject to certain constraints. For instance, this study only involves all the business English teachers from one Chinese university who have taught or are teaching OBE courses. This decision was based on the feasibility and accessibility of these samples and their perceptions represented by their responses are utilized to the development of a business English speaking teaching module based on the learning analytics of business English undergraduates at the target university.

Additionally, this study suggests that future research should be extended to other universities in China. Besides that, considering the relatively consistent language requirements for English majors set by the China's Ministry of Education, individual difference in students from different kinds of universities (e.g., top universities and regular universities) should be taken into consideration carefully. Furthermore, it is recommended that future studies increase the number of business English teachers or investigate the perspectives of other relevant stakeholders (e.g., graduated business English students, company managers) on the oral communication needs of business English students as sample subjects to enrich the findings within the same field of study.

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