

A Needs Analysis Survey for Open EAP Courses for Chinese Graduates on Overseas Exchange Programs

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Abstract. This paper reports a Needs Analysis survey done on Chinese graduate students majoring in science for an open English for Academic Purpose (EAP) course design. By conducting a survey about the sample group, the researchers attempt to discover graduate students' needs, difficulties, and study habits in English learning, what contents and skill instructions should be included in an online EAP course and how designers and instructors can better involve students in online EAP learning activities. This preliminary Needs Analysis research may provide a basis for innovative online EPA courses design and delivery, and help the selection and preparation of open EPA educational resources.

Keywords. open education, open course design, needs analysis, quantitative survey, English for Academic Purpose (EAP)

1. Introduction

Researches on English for Academic Purpose (EAP) theories (Dudley-Evans & St John 1998; Jordan 2010; Dudley-Evans 2011) and teaching practice in Chinese universities are gaining momentum in the past five years (Cai 2012; Shu 2014). Many government-funded incubating projects are now launched to boost the development of EAP courses and programs in the hope to improve the international communication abilities of future Chinese academic researchers. Since 2012, the emerging trends of massive online open courses and small scale private online courses have been attracting the attention of both Chinese educational professionals and authorities because this new and exciting online teaching and learning approach (Wang 2006, 2007; Hastings & Tracey 2004; Fox, Patterson & Ilson et al., 2014) may bring new light to the nationwide EFL reforms in China (Yuan & Liu 2014). As the Chinese government plans to send 8000 graduate level science students abroad to pursue doctorate degrees or to join exchange doctorate programs, while not every domestic university has the teaching resources of EAP, the authorities are now considering cross-university online open course projects aiming at providing open EAP courses and open education resources for these students (Cai 2012; Shu 2014; Gong & Shi 2014). Researchers are now working on the needs analysis, course book and teaching mode design (Mackey & Gass 2012).

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Under this background, this paper focuses on a needs analysis survey done for an online EAP course design in a university overseas language training center with 113 subjects of Chinese postgraduates and doctorate candidates from all over the country. The purpose of this survey is to find out: 1) the needs of postgraduate level students for EAP, 2) current and potential difficulties in their English academic studies, 3) students' expectations and preferences for online EAP learning and teaching activities. Such surveys are considered by the researchers as timely and necessary because needs analysis is like a diagnosis before prescription in EFL education (Brindley 1989; Long 2005:1). The understanding of graduate students' learning motivation, competence level, learning habits and their expectations for an online EAP course would provide support for the innovative open EAP course design, delivery and development.

The descriptive survey reported in this study attempts to discover the preference and demand for open online EAP courses of the Chinese postgraduate level learners, to what degree students accept online learning as an instructional option, and how designers and instructors can better involve students in open EAP learning activities. The results of the survey can be useful for the innovative open EAP course delivery, course material development, and online learning activities design.

2. Participants and theoretic basis

This current survey targeted a group of graduate level students who are on a government funded "China Scholarship Committee supported Overseas Academia Exchange" project, which is part of the national educational five-year plan for developing high-level Chinese universities. These students are candidates from different universities all over China who were on a two-week intensive English training course in Shanghai International Studies University from January 12 to 27, 2015. The survey design is based on the English Learning Needs Analysis model by Dudley Evans & St John (1998) and Chen (2010). This model consists of four needs' analysis dimensions, namely individual learner competence differences, individual learner motivations, learning process demands, and learning environment demands.

Survey questions regarding these four dimensions mainly focus on 1) Individual learner differences such as current English learning situation, self-assessment about English competence, learning difficulties, etc.. 2) Individual learner motivations such as the willingness and eagerness in improving English levels, learning motivations and goals. 3) Learning environment demands such as the needs for in-class settings including class forms, teaching methods, class activities, class length preference and assessment preference, etc. 4) Learning process demands such as learning strategy, interest, attitudes, study habits.

3. The Preliminary survey

For the survey design, the researchers firstly based their draft question items on the widely adopted English Learning Needs Analysis model by Dudley-Evans & St John (1998) and Chen (2010). And then they talked with four other EFL teachers (2 Chinese native and 2 English native teachers) in the department about the questions and with their written feedback worked out a trail questionnaire. After that, a pre-test for the survey was carried out with a 40-student class. Based on the pre-test survey and

analysis, the researchers modified some question items. Thus for the survey proper, each individual question item reliability was with a Cronbach's Alpha index over 0.790.

The researchers used classroom time to ask 128 students in their classes to do the survey and 113 valid responses were collected. All the raw response data were put into the SPSS software to conduct a descriptive analysis. Altogether there were 45 questions in the survey. Except for the demographic information questions and multiple choice questions concerning the students' personal information, learning experience, self-assessment and expectations, all the other questions (translated into English from Chinese) as shown in table1 were presented on Likert Scale format.

As the survey was conducted to gather data for an innovative online EAP course, the researchers wanted to find out information about some practical course design questions. First, what English contents and skills would the course focus on so as to help graduate students to improve their academic English related language abilities. Second, the researchers aimed at seeking information about the online course teaching format and class activities that the students would prefer. Third, questions were asked concerning the students' learning strategies and habits for the purpose of online course learning task design. Fourth, the researchers also asked questions related to the students' habits of and preferences to internet based English learning. This data analysis may help future students, researchers, administrators, and faculty to determine if an online EAP course meets their needs. The data analysis results are presented in the next section.

3.1. Data analysis

The SPSS descriptive analysis indicated that the sample was composed of 53.98% male students and 46.02% female students, with the 20-25 age group taking up 38.05% and the 25-30 age group accounting for 58.41%. Their educational backgrounds were largely doctorate candidates (89.38%) and the rest are all postgraduates. 90.27% of the 113 students major in natural science majors. The expected future career fields of these subjects were teaching practice (20.35%), theoretical and /or lab research (62.85%) and company business (11.50%). 95.58% students had English learning experience of a minimum of 9 years.

When all the raw responses were collected, the researchers put the data into the statistical analysis software SPSS for a descriptive and factor analysis. Table 1 and table 2 below show the data analysis output.

Table 1. Descriptive Analysis for Likert-scale questions

Question number	Question Text	Minimum	Maximum	Mean		Standard deviation
		Statistic	Statistic	Statistic	Standard error	Statistic
11	Learning English is very important because it is a useful communicative tool	1	3	1.27	.047	.500
13	Learning English well can help me in my international communication with foreign counterparts	1	3	1.32	.049	.522
14	Learning English well can help me in my future promotion in career	1	3	1.58	.061	.652
18	My tutor often asks me to do academic literature reading and reviewing in English	1	4	2.88	.042	.446
23	Using English in doing literature review is important to me	1	2	1.14	.033	.350

24	.It is important to write abstract, literature review, experiment report and papers in English.	1	5	1.24	.051	.539
26	I am satisfied with my English abilities in my work and studies.	1	5	3.30	.072	.766
27	What I need is separate skill courses in General English Reading, Writing, Speaking and Listening.	1	4	1.68	.075	.794
28	What I need is integrated courses of General English Reading-Writing, and Speaking-Listening.	1	4	1.63	.061	.644
29	What I need is separate skill courses in Academic English Reading, Writing, Speaking, and listening	1	5	1.95	.083	.885
30	What I need is integrated courses of Academic English Reading-Writing, and Speaking-Listening.	1	3	1.75	.062	.662
31	What I need is separate skill courses in both general and academic English Reading, Writing, Speaking and Listening.	1	4	1.89	.074	.783
32	What I need is integrated courses of both General and Academic English Reading-Writing, and Speaking-Listening.	1	4	1.81	.064	.680
33	What I need is a test-oriented course for TOFEL, IELTS, PETS and MOE tests.	1	5	2.26	.092	.980
34	I would like to have my English classes in the form of a teacher-centered lecture.	1	5	2.68	.101	1.071
35	I would like to have my English classes in a task-based, teacher-guided, and student-participated interactive mode.	1	4	1.72	.066	.700
36	I would like to have my English classes in the form of student-centered seminars.	1	5	2.10	.078	.834
37	I would like to have a mobile English class on the internet.	1	5	2.27	.083	.887
38	I would like to use internet classes to do research, check homework and have teachers' feedback.	1	5	1.96	.066	.699
39	I think the question-and-answer activities are every effective teaching method in class.	1	4	1.85	.058	.616
40	I think the group project activities are every effective teaching method in class.	1	4	1.86	.056	.596
41	I think the activities with a demo by the teacher or a student first and then followed by individual practice by student themselves are effective teaching method in class.	1	4	1.88	.059	.623
VALID N 113						

After this descriptive analysis, the researchers carried out a further factorial analysis for the 22 Likert-scale questions to find out the common factors of these questions. The factor analysis revealed that the questions fell into seven dimensions and these can be further classified into the four main dimensions as presented in the next section of Survey Results.

Table 2 The Rotating Component Matrix of Factor Analysis for Likert-scale Questions

	Components						
	1	2	3	4	5	6	7
I would like to have my English classes in a task-based, teacher-guided, and student-participated interactive mode.	.783						
I think the group project activities are every effective teaching method in class.	.766						

I think the question-and-answer activities are every effective teaching method in class.	.684						
I think the activities with a demo by the teacher or a student first and then followed by individual practice by student themselves are effective teaching method in class.	.626						
I would like to have my English classes in the form of student-centered seminars.							
Learning English is very important because it is a useful communicative tool	.799						
Learning English well can help me in my international communication with foreign counterparts	.754						
Learning English well can help me in my future promotion in career	.679						
Using English in doing literature review is important to me	.658						
What I need is separate skill courses in Academic English Reading, Writing, Speaking, and listening		.850					
What I need is separate skill courses in General English Reading, Writing, Speaking and Listening		.820					
What I need is separate skill courses in both general and academic English Reading, Writing, Speaking and Listening		.761					
What I need is integrated courses of both General and Academic English Reading-Writing, and Speaking-Listening.			.837				
What I need is integrated courses of Academic English Reading-Writing, and Speaking-Listening			.836				
What I need is integrated courses of General English Reading-Writing, and Speaking-Listening.			.806				
I would like to use internet classes to do research, check homework and have teachers' feedback				.866			
I would like to have a mobile English class on the internet.				.860			
I am satisfied with my English abilities in my work and studies					.649		
My tutor often asks my to do academic literature reading and reviewing in English					.623		
.It is important to write abstract, literature review, experiment report and papers in English					.579		
What I need is a test-oriented course for TOFEL, IELTS, PETS and MOE tests.						.830	
I would like to have my English classes in the form of a teacher-centered lecture.						.719	

3.2. Survey Results

With the results from the descriptive and factorial analysis, together with the frequency output of other non-Likert questions, the researchers were able to work out the needs related information about the sample graduate English learners. The results were interpreted in the following four aspects.

- 1) Individual learner differences
- 2) Individual learner motivations
- 3) Online learning environment demands
- 4) Online learning process demands

3.2. 1 Individual learner differences

The research reflected that the sample students shared some similar features in terms of their current English learning situation, English competence self-assessment, and learning difficulties. First, only 2.65% of all students felt strongly satisfied about their English competence. 53.98% of them found themselves just adequate in English

abilities and over 1/3 of the responds were unsatisfied or strongly unsatisfied about their English levels. The weakest English skills were English listening, speaking and writing. The following charts illustrate the English skills that the students wanted to improve in the next two years.

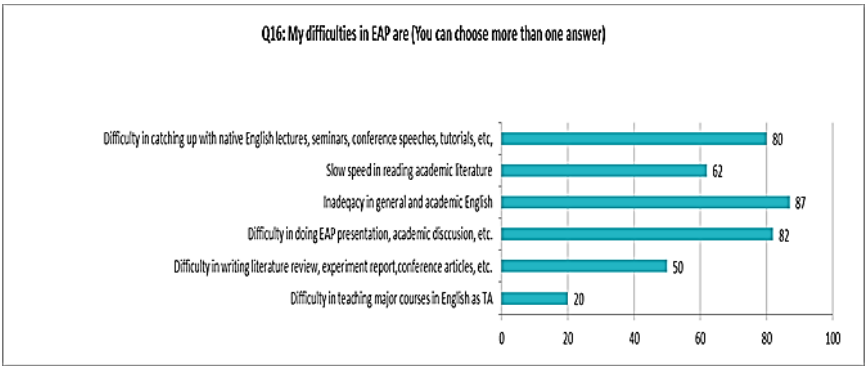


Figure 1. Students' self-assessment of EAP learning difficulties

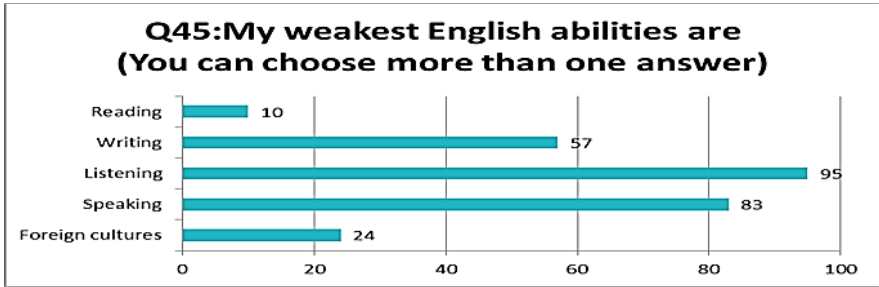


Figure 2. Students' self-assessment of their weakest English abilities

All the 113 subjects thought it very important to improve their academic English reading abilities as their tutors often asked them to read English papers, articles and books in their major fields. Although only 69.91% of students were asked to write some abstracts, literature review, experiment reports and research papers in English, 99.15% of the sample group believed that it was very important for them to have the knowledge and skill in academic English writing. The following charts provide information about the common difficulties shared by the 113 students.

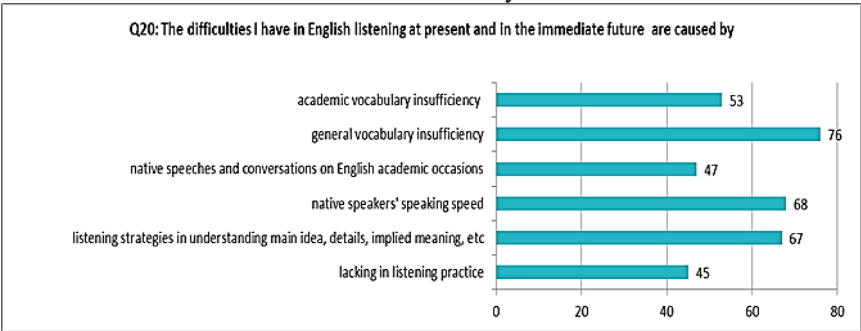


Figure 3. Students' difficulties in EAP listening at present and in the immediate future

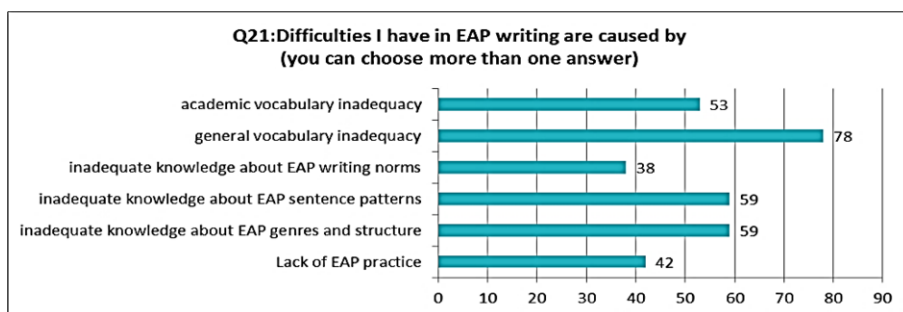


Figure 4 Students' difficulties in EAP writing

3.2.2. Individual learner motivations

Individual learner motivations such as the willingness and eagerness in improving English levels, learning motivations and goals were studied by questions designed for this dimension. The research revealed that the sample group showed common instrumental motivations rather than integrative motivations in their English learning needs.

These learners felt that their English demands at present and in the immediate future were to understand the foreign scholars' lecture or seminars (101/113) to write their research abstracts, literature reviews, experiment or research reports and dissertations in English (97/113), to communicate fluently with their international academia counterparts (96/113), to give presentations in class and on academic conferences (95/113), and to read academic English articles, reports, books (94/113). Other English facilitating needs include taking English or bilingual courses in their majors (44/113), teaching the major courses in English (28/113), and doing business in English (20/113).

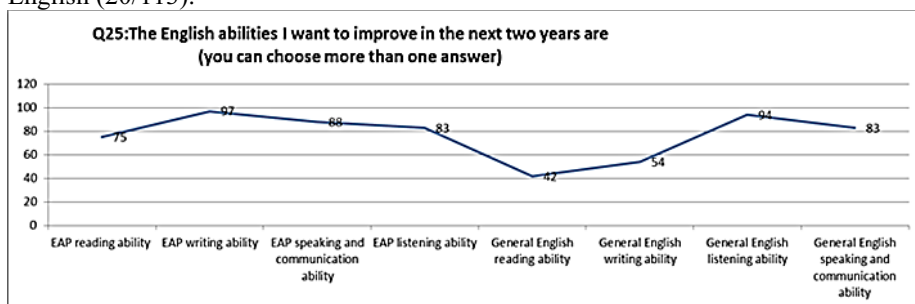


Figure 5 English abilities that students want to improve in the next two years

3.2.3. Online learning environment demands

Questions of online open EPA learning environment demands included items asking for information concerning the needs for in-class settings including class forms, teaching methods, class activities, class length preference and assessment preference, etc. The survey showed that students in the sample showed strong interest in their expectations about the open English courses, regardless of English for general or academic purposes. There was also no apparent preference to the English related

subjects. Interestingly, it was found that no matter what the content of the open EAP courses would be, whether it be listening, speaking, reading, or writing, the students expressed similar enthusiasm degree with the Strongly Agree and Agree categories occupying large proportions ranging from 87.1% to 94.9%.

Concerning the open online course class formats, the study showed that the graduate level students no longer felt satisfied with a solely teacher-centered lecture class, but rather preferred a class where they could participate in and interact with the instructor and fellow students. The survey indicated that the sample group had a highly positive attitude towards English classes in a task-based, teacher-guided, and student-participated interactive mode with over 91% responds voting for Strongly Agree. Class activities such as Q&A's, group projects, and demo-first individual work were popular among the sample group students. Following figures give information about the class activity preferences.

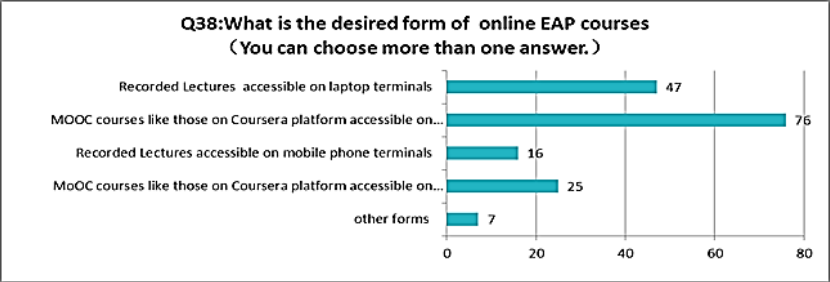


Figure 6. Students' desired form of online EAP courses

3.2.4. Online learning process demands

Questions in this dimension concentrated on issues such as students' individual learning strategy, interest, attitudes, study habits, etc. As shown in the research, the sample student group had relatively strong independent learning abilities. The commonly applied independent learning strategies included audio strategy (such as to practice their listening through dictation, intensive listening exercises, English movie, drama series and other programs viewing, etc.), reading strategy (such as academic and fictional literature reading, Google scholar search engine research, etc.) , communication strategy (such as to talk with foreign friends and academia counterparts). For these Chinese students, it seemed that the Reading and Audio Strategies were still the major learning strategies. Although the emerging multi-media and internet resources were widely used by the subjects, their utilization of the internet was still concentrating on research engine inquiries, reading academic literature, receiving and completing homework, transferring study materials, sharing test materials, watching movies and drama series, listening to English songs. The internet based laptop or mobile English courses were either not available or not to the knowledge of these Chinese students. The following figures illustrate the graduates' expected open session length and learning strategies.

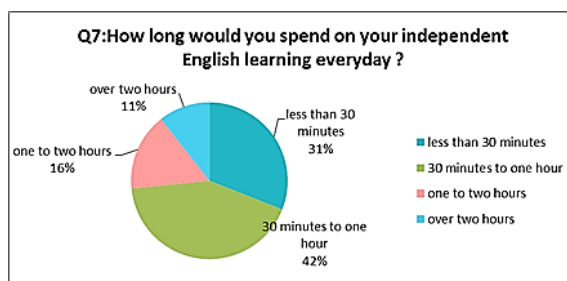


Figure 7. Students' preference of independent daily online EAP learning length

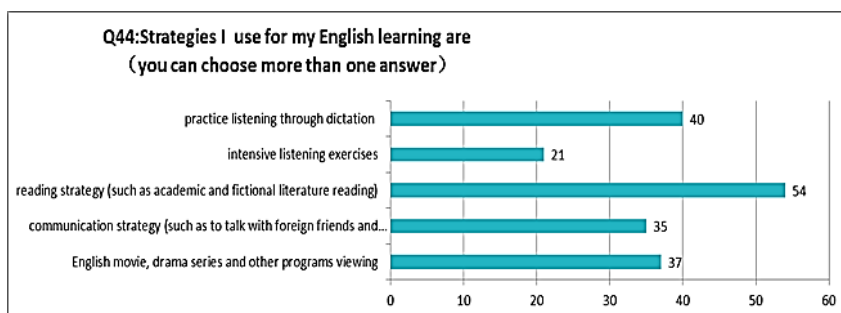


Figure 8. Students' preference of strategies in English learning for the online EAP courses

4. Conclusions and Recommendations

This preliminary survey was conducted for the purpose of providing relevant practical information for future online EAP course design and implementation for graduate level Chinese science students. It was the researchers' hope that the results of this statistic needs analysis survey may imply some suggestions for innovative online course delivery, open educational resources' presenting format selection, and online activities design for independent open learning. And EAP course developers, researchers and instructors could have some statistic survey to refer to when making their choice of teaching materials, content and skill focuses, online class presentations, online class activities, etc.. Some recommendations are proposed as follows regarding an online EAP course design.

Open EAP course length and genres: The graduate level EAP online course may be better received by students if each of the online class session lasted 30-40 minutes with another 10 to 30 minutes for individual practice. It would be best if the total length of the course is not to exceed two months with two to three sessions weekly. Considering the attention span of graduate students as indicated in the survey, each 30 minutes' session may well as be segmented into 2 to 3 smaller sections in order to keep the students alert and concentrated. According to the needs analysis, students would need more of EAP speaking, listening, and writing courses than reading or foreign culture related course. It would be more practical to provide separate online EAP courses focusing on each of the four subjects instead of a single ambitious comprehensive EAP course. It may also be good to divide the EAP courses into

different level modules so that the students can either choose their courses according to their own competence level or continue from a lower level to another higher one.

Open online Course contents: In terms of the EAP open course content design, it would be advisable for developers to include not only general English but also common science vocabulary input, and phrasal and sentential expression input for listening, speaking and writing courses. More native materials rather than modified teaching materials would be better received by the students. For example, for the open EAP listening and speaking courses, real scenarios such as recorded lectures, conference speeches, presentations, and seminars may be more inspiring for the graduate level students because the real academic audio-visual materials would create a relevant and immediate foreign learning environment for the Chinese graduates.

It would be also advisable to include important listening strategies for main idea, details, and implied meanings in online EAP listening course sessions. It can also be essential to cover speaking skills of making public speeches, making classroom and conference presentations, discussion norms, and right pronunciation, intonation and stressing patterns in the EAP speaking course sessions.

As for the writing course, EAP reading materials can be integrated into the writing course. Besides the academic writing norms such as the academic article, books, theses, literature review, conference papers, tables and graphs, etc., the students would probably embrace some inspiring instructions on academic English sentence patterns, grammar and vocabulary.

Open Online course activities and feedbacks: In designing online open EAP course activities and student practices, diverse forms such as the Q&A exercises, group discussion, role play, small project completion, and individual practice with the demo of the instruction or a fellow student can be put on the option list. The key point is the interactivity between the mobile terminal and the individual learner, between the peer, and between the student and the instructor inside and outside the online course sessions. Students' forums with peer sharing, group identification, timely feedback and help from some tutors or some experienced and high-level fellow students would be valuable and necessary to discover and solve learning problems in content, learning strategies and skills, and homework completions.

The students can also benefit from a peer group social community with the open course. Online study group forums, Wechat or Facebook discussion groups, homework discussion forums, and local real-life study groups can be formed so as to create a social network for the open course participants. Topic based reading seminars, homework exercise discussions, simulated small science project presentations and reports could be activities for the open EAP course participants in accordance with their independent learning ability and study habits.

At this stage, the researchers also recognized some limitations to this research. First, some dimensions were not included in this survey about the online open EAP course assessment mode such as the peer/instructor assessment and test formats. Second, there could have been more specific questions concerning students' awareness and attitudes towards some foreign MOOC or SPOC platforms and courses so that a Chinese students' preference can be implied. Third, more detailed questions about the expected differences between an online course and a classroom course should be asked in the future studies. It would also be insightful if further surveys and studies are conducted to find out teachers' attitude and beliefs about the innovative delivery of open online EAP courses.

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