Title: How to kill two birds with one stone: EMI teachers’ needs in higher education in China

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How to Kill Two Birds with One Stone:
EMI Teachers’ Needs in Higher Education in China

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Abstract:
Since their implementation in China’s tertiary education system two decades ago, EMI programmes have been reported largely less successful and more problematic than envisioned. Although portrayed as killing two birds with one stone, whereby both subject content learning and English language proficiency can be achieved in the same classroom, EMI has in reality been revealed to present a series of thorny problems, from teaching quality to learning achievements, from teachers’ insufficient language proficiency to students’ unsatisfactory academic outcomes. This paper addresses one of the critical issues in EMI implementation: what teachers need in order to bring about successful language learning as well as adequate subject content learning. Data sources include a questionnaire collected from different disciplinary programmes across universities in China (n=158), and interviews of nine lecturers from both key and non-key universities. The results suggest that the needs of these EMI lecturers cover a variety of areas, including institutional support as well as needs for professional and pedagogical training. Our findings indicate that there are similarities and differences in teacher needs between key and non-key universities with regard to institutional support and training programmes. The findings suggest that epistemic environments as well as goal-oriented pedagogical activities and adequate discourse strategies are necessary to enhance the learning experience of the students,
facilitate the integration of content and language learning, and empower teachers and students to identify the best classroom practices. The needs analysis is instrumental for developing both in-service and pre-service training programmes for EMI implementation in higher education and crucial if the goal of ‘killing of two birds with one stone’ is to be achieved.

Key words
Chinese higher education; EMI; needs analysis; institutional support; EMI training;

1. Introduction

Over the past decades of intensified globalization, English as medium of instruction (EMI) has been adopted by universities across the world to raise their international recognition. In China, it has attracted increased attention from researchers, practitioners and policy makers (Hu and Lei 2014; Jiang, Zhang and May 2019; Macaro and Han 2020; Zhang 2018). While portrayed as killing two birds with one stone, whereby both subject content learning and English language proficiency can be achieved in the same classroom, EMI has, in reality, a series of problems, from teaching quality to learning environments, from teachers’ insufficient language proficiency to students’ unsatisfactory academic outcomes, and from shortage of bilingual teaching resources to unclear policy goals (Jiang, Zhang and May 2019; Wang and Curdt-Christiansen 2018). Although universities in China enjoy strong policy support at the government level (Hu and Li 2017; Rose et al. 2020), there are differences in support between key universities (211, 985 projects and double first class) and non-key universities in terms of teaching and research funding, research infrastructure and human resources (MOE, 2007; Hu and Duan, 2019). The differences are also reflected in the academic qualifications, as staff members
at key universities in general receive their academic training in English at top universities in the US, UK or other western countries.

Given the differences in policy support at the state level, few studies have investigated the institutional level support from teachers’ perspective. Despite the demands for high levels of both English proficiency and pedagogy in qualified teachers, professional development and support have not been given much attention (Macaro et al. 2018; Yuan 2020; 2021). Given that in-service training is one of the major issues affecting the successful delivery of EMI programmes (Jiang et al. 2019; Macaro and Han 2020; Macaro et al. 2018), little research has been carried out with regard to what types of training are needed for EMI professionals.

This paper addresses this critical issue by examining teacher needs in EMI implementation in higher education in China. Using a questionnaire collected from EMI instructors/teachers in different disciplinary subjects of both key and non-key universities across the country, the study examines what teachers need in order to bring about successful language learning as well as adequate subject content learning. The study is supplemented by in-depth interviews with selected EMI instructors to understand what institutional support teachers need in order to achieve the goals of ‘killing two birds with one stone’. Specifically, the study seeks answers to the following research questions;

1) What support do EMI teachers require from their institutions?
2) What training programmes do EMI teachers need?
3) How are EMI teachers from key universities and non-key universities similar or different in their needs for institutional support and training programmes?

By seeking answers to these questions, this study advances our understanding of the epistemic environments as well as adequate pedagogical strategies necessary to enhance the learning
experiences of the students in EMI programmes. Importantly, it points out the potential differences in institutional support between key and non-key universities.

2. EMI: Policy implementation, institutional support and teacher training

In pursuit of its higher education (HE) internationalization, the Chinese government launched key national projects over the past years, including Project 211, Project 985, the double first-class programme, and the recent Belt and Road initiative. These initiatives have enabled both key universities and non-key universities across the country to implement EMI programmes in different disciplines. According to Wu and his colleagues (2010), 132 out of 135 universities across China offered EMI programmes in different forms, either bilingual (shuangyu) or all-English (quanying). In 2007, the Ministry of Education and the Ministry of Finance jointly announced new guidelines to support the development of effective pedagogy in the EMI programme (Ministry of Education and Ministry of Finance 2007). Subsequently, 500 bilingual courses were to be developed as ‘model courses’ between 2007 and 2010. While these initiatives show ambitious internationalisation plan at the national level, support for EMI at institutional level “remain(s) at a verbal encouragement” (Macaro and Han 2020:221). As policy enactment is a complex and multi-layered endeavour (Curdt-Christiansen 2018; Hornberger 2013; Wang and Curdt-Christiansen 2016), it is important to understand how institutions and EMI professionals engage with language policy, how they make sense of the policy goals, and what facilities and resources they need to achieve the goals. To this end, there seems to exist some disagreement between national policies and their implementation at institutional level.

Hu, Li and Lei (2014), for example, conducted a case study of an EMI Business Administration programme for undergraduates at a major university in China. They explored
how national and institutional EMI policies were interpreted and experienced from the perspectives of both EMI teachers and students. The findings suggested that there is a strong national, institutional, and individual belief about the high value of English as symbolic capital, providing a competitive edge for both individuals and the institute. But language practices in classrooms were constrained by the level of English proficiency of lecturers and students. These problems were also echoed by Jiang et al. (2019) in their study, where the ultimate goal of the institutional policy was to improve students’ English proficiency. The authors argue that, although EMI teachers employ pragmatic strategies to achieve effective classroom communication, content learning has been diluted and few opportunities have been given to students to practice their English.

Similar results have been reported in other studies (Zhang 2018; Wang and Curdt-Christiansen 2018). Zhang (2018) studied MOE’s policies and carried out classroom observations and interviews at three universities of different tiers and in different locations in China. The study pointed out that there are considerable differences between the three types of universities (211, 985 and ordinary) regarding the variety of subjects taught and the quality of the EMI programmes. In line with the other studies, Zhang (2018) also found that the English proficiency of both lecturers and students is a shared obstacle to implementing EMI in all three types of universities, but more pronounced in non-key universities. Wang and Curdt-Christiansen’s (2018) case study of a key university also illustrated that lecturers used a variety of translanguaging and translation strategies to deliver their EMI courses. These studies revealed that EMI in the form of bilingual education is recognised at both national and institutional levels. EMI programmes are generally delivered with some variety of alternative L1 use in the
classroom, some in the form of presenting PPT in English with content teaching in Chinese, some by translating key concepts, and others by repeating content in Chinese after English.

These studies have shed much light on our understanding of ideological drives for the national and institutional policies. But they also point out the gaps between the two levels of policy intentions. Studies by Hu and his colleagues (Hu 2008; Hu and Lei 2014; Hu, Li and Lei 2014; Hu and Li 2017) as well as other researchers (Tong and Tang 2017; Macaro and Han 2020; Jiang et al. 2019; Rose et al. 2020) indicate that institutional support in terms of pedagogical training and training in language communicative strategies are inadequately developed. Hu et al. (2014) showed that, although universities provide institutional support, such as organising symposia and seminars for EMI professionals to enhance their practices, these were considered limited, inadequate and ineffective. Jiang et al.’s (2019) study also showed that EMI teachers tended to rely on their L1 when dealing with heavy content subjects. There is much room for developing a more effective pedagogy as current EMI classrooms were largely dominated by teacher-fronted lectures with limited classroom activities that engage students to practice English productive skills.

Recognising that effective pedagogies are highly related to classroom discourse (Larson and Lovelace 2013; Cazden 2001), Hu and Li (2017) conducted a micro-dimension of EMI teaching by examining how teachers use questioning technics in ten classes of 50-minute lessons across five disciplines. They found that, regardless of the language used in teacher-student interactions (e.g. English only, Chinese only or mixture of English and Chinese), most questions used by teachers engaged only lower-order cognitive process of memorising and understanding. Similar patterns were also found in Hu and Duan’s study (2019), in which they observed 20 lessons of different subjects between hard and soft sciences. In this comparative study, they
found that an overwhelming majority of teacher questions and student answers were cognitively and linguistically simple. The statistical analysis showed that there is a ‘floor effect’ of instructional medium on the cognitive levels of questions and responses. Based on these findings, Hu and his colleagues argue that “pre- and in-service teacher education programmes should give special attention to the fostering of teachers’ ability to scaffold different cognitive processes and skills appropriate for particular learning objectives” (Hu and Duan 2019:318).

Taking into consideration the challenges and difficulties that EMI teachers encounter in effective delivery of EMI, Macaro and Han (2020) looked into how EMI teachers perceived their competencies, and how those competencies could be achieved through certified professional development. Using a nation-wide survey and semi-structured interviews, they found that professional development had not been a priority in most universities. Despite that EMI certification could benefit both institutions and individuals, EMI professionals believe that issuing such a certificate can be problematic as it “not only needs to report on levels of General English proficiency and interactive skills to ensure successful delivery (comparable to L1 MOI programmes), but also to report such linguistic proficiency and skills in the respective disciplines and subjects (content-based teaching)” (Macaro and Han 2020: 229). They argued that successful EMI instruction required EMI teachers to have more competencies, such as teaching skills suitable for different academic disciplines rather than teaching skills in L2 and English proficiency alone.

In understanding why EMI professionals teach the way they do and what challenges they face, Yuan (2020) identified three barriers that contribute to ineffective EMI delivery: emotional, pedagogical, and social barriers. Emotionally: there is a general anxiety and resistance towards using English in the classroom as many lecturers fear to reveal their Chinese accents or grammar
slips in communication. Pedagogically: Chinese EMI lecturers tend to prepare their lectures by translating content from Chinese into English and deliver their teaching in English monologue. Spontaneous language use in the classroom for clarification or instruction is rarely seen. When spontaneous questions are raised by students, lecturers tend to switch to Chinese to explain and clarify difficult concepts and theories. Socially, there is a “lack of systematic preparation and development for EMI teaching in their situated work contexts” (Yuan 2020: 313).

These barriers are not uncommon across international higher education contexts. Dearden and Macaro (2016), for instance, conducted a comparative study in Austria, Italy and Poland. They found that EMI lecturers tended to translate course materials and power point slides from L1 into English. These lecturers were selected to teach EMI simply because they had overseas academic experiences and spoke English well. Inadequate professional training may result in emotional and professional resistance against teaching EMI (Aguilar 2017; Airey 2011). Block and Moncada-Comas (2019)’s study in Catalonia revealed that EMI lecturers in STEM programmes did not position themselves as authoritative, authentic and knowledgeable English language teachers (ELT) to address students’ language issues in learning. Such self-identification or positioning as professionals and not ELTs can be problematic as they provide little opportunities for students to use English, which defeats the purpose of EMI goals and purposes (Airey 2012; Farrell 2019).

The literature review above reveals the undeniable fact that challenges and problems exist in EMI instruction in the Chinese HE context. Despite the fact that Chinese HE enjoys both top-down and bottom-up policy support, there are serious concerns about achieving the dual goal of learning a disciplinary subject and improving English proficiency. The findings from the above reviewed literature indicate that a detailed teacher needs analysis is necessary for future designs
of a teacher development programme. Given that the existing literature review has paid relatively little attention to specific measures concerning how to address the teachers’ concerns in order to raise teaching quality, our study responds to these urgent matters to examine what types of institutional support should be in place, and what training programmes are needed.

3. Method

The study adopted an explanatory sequential mixed methods design (Creswell and Clark 2017), for which quantitative data were collected by means of a self-developed survey. The survey data were analysed first and then expanded and corroborated by qualitative data obtained from one-on-one in-depth interviews. The rationale for this approach was that results from the survey yielded some general patterns of how EMI teachers from key and non-key universities were similar or different in their needs for institutional support and training programmes, which could be further refined and elaborated through an in-depth qualitative exploration. Figure 1 shows the sequence of data collection and analysis of the study.

[Insert Figure 1 here]

Figure 1: Research design sequence
3.1 Quantitative data collection and analysis

3.1.1. Participants

The participants in this study were recruited through the snowballing method. The authors had developed extensive connections during their long-term teaching practices. Firstly, they contacted former and current colleagues and explained the purpose of the study. Emphasis was made to these colleagues to include participants from both key and non-key universities.
Then, they were requested to send the online invitation to their colleagues and friends in their social networks. A total of 158 non-English lecturers from different universities located across China responded to our call. 51.3% (81) were from key universities and 48.7% (77) were from non-key universities. The gender distribution of the sample was 57.6% female and 42.4% male.

Table 1 presents demographic and academic information about the participants. The two groups of teachers did not differ in age ($\chi^2$ (2, $N = 158$) = 12.95, $p = .11$) and gender ($\chi^2$ (1, $N = 158$) = 1.16, $p = .28$). However, more teachers from non-key universities had EMI teaching experiences for less than five years (($\chi^2$ (2, $N = 158$) = 11.97, $p < .05$), and more teachers from key universities had overseas study experience ($\chi^2$ (1, $N = 158$) = 12.57, $p < .001$).

Table 1: Demographic and academic profiles of the survey participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Key University ($N = 81$)</th>
<th>Non-key University ($N = 77$)</th>
<th>All participants ($N = 158$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>45.5%</td>
<td>51.9%</td>
<td>44.3%</td>
</tr>
<tr>
<td>40-49</td>
<td>35.0%</td>
<td>38.2%</td>
<td>31.6%</td>
</tr>
<tr>
<td>50-59</td>
<td>19.5%</td>
<td>9.9%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>46.8%</td>
<td>38.3%</td>
<td>42.4%</td>
</tr>
<tr>
<td>Years of Teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 years</td>
<td>46.8%</td>
<td>64.2%</td>
<td>55.7%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>33.8%</td>
<td>16.0%</td>
<td>24.7%</td>
</tr>
<tr>
<td>Above 10 years</td>
<td>19.5%</td>
<td>19.8%</td>
<td>19.6%</td>
</tr>
<tr>
<td>With study abroad experiences</td>
<td>88.3%</td>
<td>64.2%</td>
<td>75.9%</td>
</tr>
</tbody>
</table>

3.1.2. EMI Teacher Needs Questionnaire

As no instrument showing EMI teacher needs was available, a survey that sought to understand EMI teachers’ needs for institutional level support was developed. Drawing on existing research and theories related to EMI (e.g. Hu 2019; Hu and Duan 2019; Hu and Lei 2004; Hu et al. 2017; Jiang et al. 2019; Macro and Han 2020; Rose and Mckinley 2018; Rose et
al. 2019; 2020), a pilot interview with three EMI lecturers was carried out by the research team. The three EMI lecturers were from one key university and two non-key universities. Due to the movement restrictions because of the COVID-19 pandemic, the interview was conducted online and recorded. The interview consisted of a set of open-ended questions, exploring lecturers’ perceptions of institutional policies and facilities concerning EMI implementation, and their needs for bringing about efficient EMI teaching and student learning. Based on the interviews and the existing literature, the initial draft of the questionnaire was then constructed and piloted with some EMI lecturers to ascertain that the questions in the survey could be interpreted as intended. To ensure content validity of the questionnaire, comments and suggestions from colleagues, experienced EMI lecturers and team members were consistently obtained throughout the questionnaire development process. Items were revised based on the results from the comments after the first pilot. The revised survey was piloted again with another small group of EMI lecturers, and the questions were further refined. EMI lecturers involved in the pilot stage were from both key and non-key universities, and were not included in the main study.

The finalised bilingual (Chinese and English) survey consists of three sections: 1) institutional support (15 items), 2) teachers’ needs for professional and pedagogical training (10 items), and 3) demographic information. For the first two sections, all questions were asked based on a 5-point rating scale (1 = no need; 3 = moderate need; 5 = very strong need).

The questionnaire was then uploaded to online surveys.ac.uk. and sent to our academic social network. Consideration was given to include both key universities and non-key universities. The survey remained opened for one month. We received a total of 208 responses, which included a number of 50 English language and literature lecturers who could not be included in the analysis. We excluded them because the study focuses on EMI subjects in
sciences and social sciences, not on language subjects. After data cleaning, 158 completed
responses were submitted to exploratory factor analysis (EFA) and descriptive and inferential
analyses using SPSS 26.

3.2 Semi-structured interviews

3.2.1 Interviewees

On the basis of an initial analysis of the survey, we carried out semi-structured one-to-one
interviews with nine EMI teachers who either had indicated willingness to participate in the
questionnaire or were recruited, based on their academic discipline, through our network, as we
intended to include participants from academic disciplines across sciences and social sciences in
both key and non-key universities. Table 2 reports participant information (named from P1 to P9
for purpose of anonymity).

Table 2. Information about Interviewed Participants

<table>
<thead>
<tr>
<th>Code</th>
<th>Discipline</th>
<th>Age</th>
<th>Gender</th>
<th>Position</th>
<th>Institution type</th>
<th>EMI teaching years</th>
<th>Graduate institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Material science and engineering</td>
<td>Late 50s</td>
<td>Male</td>
<td>Professor</td>
<td>Non-key</td>
<td>20</td>
<td>China</td>
</tr>
<tr>
<td>P2</td>
<td>Naval architecture and ocean</td>
<td>Early 40s</td>
<td>Female</td>
<td>Associate professor</td>
<td>211 Project, Double-1st</td>
<td>10</td>
<td>The UK</td>
</tr>
<tr>
<td>P3</td>
<td>Material science and engineering</td>
<td>Late 50s</td>
<td>Male</td>
<td>Professor</td>
<td>Non-key</td>
<td>20</td>
<td>China</td>
</tr>
<tr>
<td>P4</td>
<td>Civil engineering</td>
<td>Late 40s</td>
<td>Female</td>
<td>Associate professor</td>
<td>211 Project, Double-1st</td>
<td>6</td>
<td>The UK</td>
</tr>
<tr>
<td>P5</td>
<td>Material science and engineering</td>
<td>Early 30s</td>
<td>Female</td>
<td>Associate professor Lecturer</td>
<td>Non-key</td>
<td>3</td>
<td>The UK</td>
</tr>
<tr>
<td>P6</td>
<td>Material science and engineering</td>
<td>Early 40s</td>
<td>Female</td>
<td>Associate professor</td>
<td>Non-key</td>
<td>6</td>
<td>The UK</td>
</tr>
<tr>
<td>P7</td>
<td>Material science and engineering</td>
<td>Early 40s</td>
<td>Female</td>
<td>Associate professor</td>
<td>Non-key</td>
<td>10</td>
<td>China</td>
</tr>
<tr>
<td>P8</td>
<td>Social policy</td>
<td>Early 40s</td>
<td>Male</td>
<td>Associate professor</td>
<td>985 Project, 211 Project, Double-1st</td>
<td>10</td>
<td>The UK</td>
</tr>
</tbody>
</table>
3.2.2. Semi-structured interviews

Interviews were conducted either in face-to-face format in an office or through WeChat, a Chinese online platform. All interviews were conducted in Chinese and recorded. The overall interview structure was designed as a follow-up to mirror the online questionnaire but allowed the participants to provide elaborated answers and in-depth discussion about their needs and challenges in EMI teaching. Each interview lasted between 30 and 45 minutes. The interviews were transcribed in Chinese first and then translated into English by the researchers (all are fluent bilinguals).

When coding the data, constant comparative coding procedures (Glaser 1992) were used. Codes were generated to identify, organize, and categorise themes in comparison with participant perceptions on institutional support and professional development needs to cross-check across the interview data (Glaser 1992). For reliability, two researchers coded the data independently and then compared the coded results, discussing the results to reach consensus and attain accuracy of the findings (Creswell and Clark 2017).

4. Findings

4.1. Institutional support

The first section of the survey contains 15 items that probed into EMI teachers’ perceived needs for institutional support. To estimate their factorial structure, EFA was conducted using the Maximum Likelihood method of extraction. Bartlett’s test of sphericity was significant ($X^2(78) = 453.35, p<0.001$) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was high
(KMO = .85), indicating that it was acceptable to proceed with factor analysis. A non-orthogonal rotation (Direct Oblimin, δ=0) was conducted since the factors were expected to be correlated.

Three factors were identified, which accounted for 70.7% of the total variance. Table 3 presents Cronbach’s alpha values and the inferential results between the key university group and non-key university group (tables 4-6 provide details of factor loadings for each factor).

Factor one consisted of six items and was labelled *providing professional development opportunities*, suggesting the needs of EMI professionals from their institutes to support them with various professional development programmes. Factor two, *EMI classroom facilitator*, consisted of five items, reflecting EMI teacher needs for enabling them to perform their duty and act upon their responsibility as EMI professional. Factor three is composed of four items, focusing on *setting up evaluation criteria of EMI* programmes, including setting up clear goals for measuring learning outcomes.

[Insert Table 3]

Table 3. EFA and inferential results for institutional support

<table>
<thead>
<tr>
<th>Factors</th>
<th>Key-University</th>
<th>Non-key University</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing professional development opportunities</td>
<td>.92</td>
<td>2.33 (0.92)</td>
<td>2.43 (1.00)</td>
</tr>
<tr>
<td>EMI teachers classroom facilitator</td>
<td>.77</td>
<td>2.18 (0.75)</td>
<td>2.71 (0.83)</td>
</tr>
<tr>
<td>Setting up evaluation criteria of EMI</td>
<td>.85</td>
<td>2.19 (0.75)</td>
<td>2.63 (0.97)</td>
</tr>
</tbody>
</table>

* **p < .01; ***p < .001

In what follows, we first present the results of the study by describing the factors and then report on the comparative analysis between the two groups to identify the similarities and differences regarding their perceived needs. Following that, we triangulate the quantitative analysis with the qualitative interview data to explore the participants’ in-depth concerns about EMI.
4.1.1 Professional development opportunities: ‘go out’ and ‘invite in’

Table 4 EFA and inferential results for providing professional development support

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Factor loading</th>
<th>α</th>
<th>Key-University M (SD)</th>
<th>Non-key University M (SD)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing professional development opportunities</td>
<td>Provide professional development (in-service) training to teachers to update their pedagogical skills.</td>
<td>.92</td>
<td>.92</td>
<td>2.26 (1.05)</td>
<td>2.37 (1.11)</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>Provide professional development (in-service) training to teachers to update their professional content knowledge.</td>
<td>.89</td>
<td></td>
<td>2.42 (1.22)</td>
<td>2.36 (1.13)</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>Provide opportunities to visit Anglophone higher education institutes to observe disciplinary courses.</td>
<td>.85</td>
<td></td>
<td>2.14 (1.09)</td>
<td>2.30 (1.26)</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Invite language professionals to observe EMI courses and give suggestions for improvement.</td>
<td>.81</td>
<td></td>
<td>2.51 (1.20)</td>
<td>2.62 (1.11)</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Provide opportunities to visit other international higher education institutes to observe their EMI programmes.</td>
<td>.81</td>
<td></td>
<td>2.19 (0.95)</td>
<td>2.32 (1.18)</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>Invite disciplinary experts to observe EMI courses and give suggestions for improvement.</td>
<td>.65</td>
<td></td>
<td>2.45 (1.15)</td>
<td>2.59 (1.18)</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td><strong>Factor Mean</strong></td>
<td></td>
<td></td>
<td>2.33 (0.92)</td>
<td>2.43 (1.00)</td>
<td>0.63</td>
</tr>
</tbody>
</table>

As can be seen from table 4, EMI teachers from both types of universities reported similar levels of need to receive guidance on EMI pedagogy training and instructional professional development. The needs were reflected in both language training and disciplinary content training. The participants showed strong needs to observe and be observed by experts in their disciplinary teaching in the form of ‘going out’ to other universities (abroad or home) and ‘invite in’ experts. These expectations are consistent with our interviews with the interviewed participants.
P6, an associate professor in material science and engineering from a non-key university, expressed the urgent need for her institute to provide training on a regular basis.

I want to attend more training. I hope the institute could provide training programmes in a systematic manner or regularly. Otherwise, it would be hard to be effective teachers in real terms.

(Face-to-face interview with P6, 9/December/2020)

Her views were echoed by P4 (Civil engineering), P5 (Material science and engineering) and P8 (Social policy). These EMI lecturers regarded training as a necessity for them to conduct effective EMI classes. P8, an associate professor at a key university in the South, stated that, despite having no language barrier with his EMI teaching, he believed that HE institutes should regularly provide opportunities for EMI lecturers to go abroad to be “recharged” (*chongdian*, 充电) through observing disciplinary-related EMI courses. According to him, such international communications could help the EMI lecturers update their disciplinary knowledge and improve EMI teachers’ English language proficiency.

In a similar vein, P5 (from a non-key university) also expressed her expectations to attend such training. While acknowledging that overseas EMI institutions may provide relevant training and allow them to communicate with experts from either English speaking countries or non-English speaking countries, she recognised the importance of seminars or workshops in local contexts.

Seminars or workshops do not necessarily have to be organized abroad. An alternative is that experts can be invited to come to China.

(Face-to-face interview with P5, 4/September/2020)
It is noteworthy that in our interviews with those from 985-project or 211-project institutes, we found that the opportunities for EMI teachers to go abroad for training are comparatively abundant. P9 (material science and engineering), for example, from a 985-project university in west China articulated,

> Every a few months, our institute announces overseas visiting/training programmes for EMI teachers, mostly in short terms, such as Australia, like Michigan or other universities in the US, or England, such as Oxford… These programmes are organised by different departments of the Uni… From my perspective, the discussion types of training programmes are really useful for people to share their experiences and reflect on their teaching.

(WeChat interview with P9, 28/October/2020)

The findings are consistent with the policy initiatives where key universities have been funded comprehensively to make EMI courses available across different disciplines in order to be competitive in HE internationalisation (Hu 2019; Pan 2007; Rose et al. 2020). The non-key universities have, however, received less funding to build up their EMI programmes despite the requirement from the government to offer up to 10% of courses in English (MOE 2001; Wang and Curdt-Christiansen 2019). While both types of universities showed strong needs for in-service professional training, the non-key universities seemed to lack institutional support for organised training opportunities. The inconsistency between universities’ internationalisation requirement and systematic support has been one of the major demotivation factors in lecturers’ commitment to EMI teaching (Yuan 2020).

4.1.2 Facilitating classroom practices

Factor analysis showed that teachers from the key university group differed significantly from their peers from non-key universities regarding their needs to better their engagement with
Table 5: EMI classroom practices enabler

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Factor loading</th>
<th>α</th>
<th>Key-University M (SD)</th>
<th>Non-key University M (SD)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitating EMI teachers’</td>
<td>Reduce class size to allow more interaction in class.</td>
<td>.52</td>
<td>.77</td>
<td>2.12 (0.92)</td>
<td>2.84 (1.07)</td>
<td>4.56***</td>
</tr>
<tr>
<td>classroom practice</td>
<td>Balance lecturer-centred and student-centred seminars to provide</td>
<td>.49</td>
<td></td>
<td>2.17 (0.75)</td>
<td>2.65 (0.94)</td>
<td>3.58***</td>
</tr>
<tr>
<td></td>
<td>students with more opportunities to use academic English.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Balance the numbers of local and international students in EMI</td>
<td>.55</td>
<td></td>
<td>2.81 (1.09)</td>
<td>3.15 (1.04)</td>
<td>2.03*</td>
</tr>
<tr>
<td></td>
<td>classes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide project-based financial support to EMI courses.</td>
<td>.60</td>
<td></td>
<td>2.09 (1.11)</td>
<td>2.32 (1.17)</td>
<td>1.26</td>
</tr>
<tr>
<td></td>
<td>Add value to EMI courses in workload.</td>
<td>.72</td>
<td></td>
<td>1.95 (0.96)</td>
<td>2.58 (1.29)</td>
<td>3.48**</td>
</tr>
<tr>
<td>Factor Mean</td>
<td></td>
<td>2.18 (0.75)</td>
<td></td>
<td>2.71 (0.83)</td>
<td></td>
<td>3.89***</td>
</tr>
</tbody>
</table>

As shown in table 5, EMI teachers from the non-key university group showed significantly higher levels of preference to reduce class size and balance lecturer-centred and student-centred seminars compared to the key university group. The findings indicate that the lecturers were cognizant of the insufficient engagement with and the fewer opportunities to use academic English in classrooms. The lack of engagement was also identified by Hu and his colleagues (Hu et al. 2017; Hu and Duan 2019) who found not only fewer opportunities for questions and answers, but also a poor quality of questioning technique used by teachers in classroom. The differences between the two types of universities were also shown in the EMI teachers’ expectations of balancing the numbers of international and local students. International students,
however, were mostly enrolled in key universities (Wang and Curdt-Christiansen 2016) whereas non-key universities have few international students. Interestingly, both groups did not differ in their needs for project-based financial support to EMI courses.

These results were also confirmed by our interview data. When asked how they conducted EMI teaching and whether there were opportunities for interaction, most interviewees noted that students were unwilling to use English in the classroom. P7’s (non-key university) explained.

In most cases, my class is conducted in a spoon-fed manner. Students are mostly passive. I always ask them to share ideas voluntarily, but few put up their hands or stand up… I don’t think the problem lies in their poor English. If their English were really poor, they should try harder to use it because practice makes perfect. It’s a matter of losing face…

(Face-to-face interview with P7, 7/September/2020)

Lack of interaction in the classroom could be a result of cultural practices as indicated by P7 whose ‘spoon-fed’ pedagogy is largely observed in Chinese EMI HEIs. Yuan (2020) and Jiang et al. (2019) reported similar findings in their study where teacher-fronted lectures were dominant. In our interview, P7 regarded such practices as students’ “fear of ‘losing face’ or lack of confidence” whereas the participant in Jing et al.’s (2019:114) study considered whole classroom teaching as a way to “maintain face”. While sharing views with P7, P2 (key university) pointed out another critical issue in EMI classes.

The EMI course I teach has 32 teaching hours in one semester and I have to finish 15 units. To be frank, the allocated teaching hours are barely enough for me to cover the content, so there is little time for students to interact in English in class. I think the university should set up more students-centred seminars. When I was a student abroad, we had many seminars, which gave us a lot of opportunities to talk and reflect.

(Face-to-face interview with P2, 21/September/2020)
While teachers from both types of higher education institutes (HEI) have concerns about the insufficient interactive activities in the class, they demonstrated different needs for institutional support. The current practices, both in teaching culture and format, showed a deviation from the policy goal to achieve ‘killing two birds with one stone’.

Another key concern about EMI delivery was the EMI teachers’ preference for adding workload value. While the majority of the interviewees acknowledged that their institutes have given some support to encourage them in teaching EMI courses, the efforts and hours they put into preparation was far from the actual hours reflected in their workload. Teachers from the key universities may have more opportunities to obtain project-based financial support for preparing EMI courses, their counterparts showed different experiences as indicated by “insufficient time for course preparation” (P5 and P7) and “the added value was just ‘symbolic’ which is not proportional compared to the efforts we put into the preparation”.

4.1.3 Setting up clear evaluation goals

Teachers from key universities also differed significantly from their peers in non-key universities on their need for setting up clear evaluation goals. Teachers from non-key universities tended to agree more on establishing clearer requirements for EMI professional English proficiency level, changing the evaluation criteria of EMI courses and for setting up clear goals for student learning outcomes in both language and academic development, as indicated in table 6.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Factor loading</th>
<th>$\alpha$</th>
<th>Key-University M (SD)</th>
<th>Non-key University M (SD)</th>
<th>$t$</th>
</tr>
</thead>
</table>
### Table 1: Evaluation Criteria of EMI Courses

<table>
<thead>
<tr>
<th>Setting up evaluation criteria of EMI</th>
<th>Set clear requirements for disciplinary lecturers’ English proficiency level.</th>
<th>.75</th>
<th>.85</th>
<th>2.34 (0.90)</th>
<th>2.72 (1.12)</th>
<th>2.34*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set up the evaluation criteria of EMI courses.</td>
<td>.74</td>
<td></td>
<td>2.04 (0.97)</td>
<td>2.70 (1.24)</td>
<td>3.75***</td>
</tr>
<tr>
<td></td>
<td>Set up clear goals for the learning outcomes in language development.</td>
<td>.72</td>
<td></td>
<td>2.26 (0.99)</td>
<td>2.59 (1.04)</td>
<td>2.06*</td>
</tr>
<tr>
<td></td>
<td>Set up clear goals for the learning outcomes in academic development.</td>
<td>.59</td>
<td></td>
<td>2.10 (0.90)</td>
<td>2.53 (1.15)</td>
<td>2.59*</td>
</tr>
<tr>
<td></td>
<td><strong>Factor Mean</strong></td>
<td></td>
<td></td>
<td>2.19 (0.75)</td>
<td>2.63 (0.97)</td>
<td>3.26**</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

In general, all the interviewees stated that there was no clear or special evaluation of EMI courses in their respective universities. With regard to *change the evaluation criteria of EMI courses*, our interviews showed that there was a strong need for institutions to set up policy documents and curriculum guidelines outlining the goals and outcomes of EMI courses. Despite the absence of clear learning goals of EMI curriculum, most interviewees agreed that for postgraduate courses, students should be able to use English for academic writing. P2 (key university) acknowledged that, English reading ability is the ultimate goal as most students need to conduct research, publish academic papers. Then they need to read high quality academic literature in English…most importantly, they need to understand what is going on in researched field. So they need to have a strong reading ability and good mastery of technical terminologies. Otherwise, it (English) will become a constrain for future research.

(Face-to-face interview with P2, 21/September/2020)

The interview showed clearly that there were goals and learning outcomes of EMI courses, seen from P2’s perspective. While there were high expectations of EMI lecturers from key universities (P4 and P9) to achieve the ‘killing of two birds with one stone’, those from non-key universities indicated that it was an illusion. P3 commented,
I have never supported the EMI/bilingual course. I don’t think there is any effective learning for the students. Like I said before, there are core courses in all disciplines. Those core courses should never be conducted in English. They (the students) can’t even do well in Chinese, let alone in English. Some of the policies and curriculum goals are written down as showcase for people.

(Face-to-face interview with P3, 3/September/2020)

The strong emotive adverb ‘never’ had been used twice in this short excerpt by P3. It reflected his disbelief in setting up EMI evaluation goals. For him, learning the content well in Chinese should be the main learning outcomes and “knowing some key words and phrases in English and roughly comprehending English texts should be sufficient because language is not knowledge”. His strong view indicated that ‘killing two birds with one stone’ was an illusion (想的太虚), not a reality. His emotional and professional resistance was similar to the self-positioning of the STEM lecturers in Block and Moncada-Comas’s (2019) study who regarded themselves not as ELTs, but as disciplinary professionals. P3’s strong resistance to EMI courses showcased the immense challenges faced by HEIs in carrying out successful EMI required by national guidelines. It also indicates that EMI may not be necessary for all types of universities, especially when students have difficulties to access curricula in English.

The above findings showed clear differences between the two types of HEI in terms of their ideological beliefs and expectations of the student learning outcomes. In the next section, we explore what needs EMI professionals have for their training.

4.2 EMI professionals’ needs for in-service training
This section consists of ten items and focuses on what training programmes teachers might need to get themselves more qualified to carry out effective EMI teaching. EFA was conducted, and results revealed two factors that accounted for 79.7% of the variance in the data (KMO=.84; χ²(45) = 1546.72, p<0.001). Each factor consists of five items. Factor 1, labelled as EMI Teaching Skills Training, covers teachers’ needs in organising classroom activities and developing functions of teacher talk. Factor 2 is labelled Needs for Language and Content Knowledge Training; it consists of five items, which focus on language use in classroom. As shown in table 7, the groups did not differ in their needs for academic language training and classroom language use, suggesting that both groups faced the same challenge.

Table 7: Descriptive and inferential results for the [training program section]

<table>
<thead>
<tr>
<th>Factors</th>
<th>α</th>
<th>Key-University</th>
<th>Non-key University</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI Teaching skills training</td>
<td>.92</td>
<td>2.39 (0.88)</td>
<td>2.57 (0.88)</td>
<td>1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs for language and knowledge training</td>
<td>.94</td>
<td>2.42 (1.04)</td>
<td>2.49 (0.93)</td>
<td>0.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2.1. EMI Teaching Skills Training

Table 8 shows the EFA results and inferential results between the key university group and the non-key university group. Results show congruence with the literature as both groups of teachers need training in pedagogical knowledge and the functions of teacher talk (Hu and Duan 2019; Hu et al. 2014; Jiang et al. 2019). Statistically, our study showed a similar level of preferences for training at the two types of HEI. This could be due to the fact that more EMI teachers in key HEIs were junior colleagues with fewer years of teaching experience, as indicated in table 1.

Table 8: EFA and inferential results for professional development training programme

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor loading</th>
<th>α</th>
<th>Key-University</th>
<th>Non-key University</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI Teaching skills training</td>
<td>Be able to teach students how academic texts are organised at different levels, such as sentence, paragraph, and section.</td>
<td>.89</td>
<td>.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Familiarise themselves with functional classroom discourse.</td>
<td>.89</td>
<td>2.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.95)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learn how to plan activities that maximise students use of English language for social and academic purposes.</td>
<td>.87</td>
<td>2.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receive training in using social language to discuss disciplinary topics (politely agree or disagree and move the conversation around disciplinary topics)</td>
<td>.85</td>
<td>2.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop disciplinary vocabulary knowledge in English.</td>
<td>.82</td>
<td>2.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor mean</td>
<td></td>
<td>2.39</td>
<td>2.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.88)</td>
<td>(0.88)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Our interview data show that teachers have a strong need for pedagogical training, such as organising classroom activities and using social language to engage with students to use English for both social and academic purposes. This need was mentioned by both those who had and those who had not overseas education experience in Anglophone countries. P2 (key university) explained,

I personally believe that I can speak English well, and I can manage unexpected and spontaneous questions raised by students in classroom, I feel I am ok. But I do need to update my pedagogical knowledge and teaching methods, in other words, to know how I can best help students. This includes their English academic writing skills as well as overall English language development – I really want to learn new methods (of teaching).

Although P2 received overseas training for her PhD and her self-evaluation of English proficiency was “ok”, she clearly articulated a need to update her pedagogy, which goes beyond
teaching methods to include teaching English academic writing skills to her students. She continued in our conversation by saying,

Sometimes, I feel that my EMI teaching is coming into “a bottleneck period”, so if I have the opportunity to receive any training, I would love to sit down and communicate with other EMI teachers, especially those from countries where EMI teaching has been comparatively successful.

(Face-to-face interview with P2, 21/September/2020)

The strong need for pedagogical training was shared by all interviewees. P3 (non-key university) confirmed that “I have been teaching EMI for over ten years. The longer I teach, the more confused I feel because sometimes I do not know whether my methods work or not, so yes, training is very welcome”. Similarly, P5 stated that “I am a new teacher here. I have a lot to learn. I want to learn from other experienced EMI teachers, especially their teaching skills”. These outcries for updating their pedagogical knowledge were congruent with findings from studies by Macaro and Han (2020), Hu and Duan (2019), Jiang et al. (2019) and Yuan (2020; 2021). Despite having adequate linguistic proficiency, the EMI teachers in China, in general, lack the pedagogical skills to enhance students’ cognitive engagement to learn both content and language (Hu and Duan 2019; Yuan 2020).

4.2.2 Needs for Language and Content Knowledge Training

Despite the majority of our participants (75.9%) had received overseas education in English, our findings show that the two types of HEI do not differ in their need for both language and content knowledge training. Table 9 shows that demands for participating in training provided by both language specialist and disciplinary specialist were high on the list. This is followed by receiving training to develop syllabus that takes into account not only content but also language
development. Observe model classes was the next need, followed by developing communicative skills.

Table 9: Needs for Language and Content Knowledge Training

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Factor loading</th>
<th>α</th>
<th>Key-University M (SD)</th>
<th>Non-key University M (SD)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs for language and content knowledge training</td>
<td>Observe model classes to identify factors that enable or hinder students’ development of academic knowledge in English.</td>
<td>.85</td>
<td>.94</td>
<td>2.35 (1.10)</td>
<td>2.40 (1.00)</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>Participate in training provided by a language pedagogy specialist.</td>
<td>.84</td>
<td></td>
<td>2.53 (1.21)</td>
<td>2.51 (1.06)</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Participate in training provided by a disciplinary specialist.</td>
<td>.82</td>
<td></td>
<td>2.53 (1.15)</td>
<td>2.52 (1.11)</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>Receive training to develop syllabus that takes into account not only content but also language development.</td>
<td>.81</td>
<td></td>
<td>2.43 (1.12)</td>
<td>2.54 (1.06)</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>Develop knowledge about communicative skills in classroom to motivate student participation.</td>
<td>.77</td>
<td></td>
<td>2.25 (1.04)</td>
<td>2.48 (1.00)</td>
<td>1.45</td>
</tr>
<tr>
<td></td>
<td>Factor mean</td>
<td>2.42 (1.04)</td>
<td></td>
<td>2.49 (0.93)</td>
<td></td>
<td>0.45</td>
</tr>
</tbody>
</table>

Our interview data also show similar needs. While most of our interviewees were confident about their language ability, they nonetheless expressed a strong need to participate in language training programmes. P7 (non-key university), for example, did not obtain her postgraduate degrees abroad, which made her concerned about using English to teach in class.

I need training in oral communication…I know how to say all the technical terms in my research field in English. But when I try to link the words to make sentences, I am always confused by whether the tense is correct or whether I am using the right
prepositions. I am afraid of conveying wrong information or making my intention misunderstood if I use the wrong tense or preposition.

(Face-to-face interview with P7, 07/September/2020)

The interview suggested that those who had not studied abroad, such as P7, P1 and P3, were more concerned about using English in classrooms. There was a clear awareness from these lecturers that content and language should be closely integrated (Yuan 2021). P1 confirmed that his colleagues and himself made PPTs in English, but content delivery was in Chinese or a mixture of Chinese and English. P1’s acknowledgement was consistent with findings from other empirical studies (e.g., Wang and Curdt-Christiansen 2019). Comparing to P1, P3 and P7, those who had overseas studying experiences, such as P5, P6, P8 and P9, showed more confidence in using English, as P9 illustrated:

I obtained both my master’s and doctoral degrees in the UK. When I was studying there, all the subjects were taught in English. I could talk about the subject matter in English and communicate with teachers and classmates very well in English, so there is no difficulty for me to teach my course in English.

(WeChat interview with P9, 28/October/2020)

Despite her comfort in using English, P9 expressed her desire to take language training when possible. According to her, she benefited considerably from attending the training programmes for EMI teachers provided by her institution. In her own words,

I have participated in several training programmes organized by our school. Every time I went abroad to study, I learned a lot. Although the training format was almost the same, including classroom observation, workshop and teaching presentation, I think these programmes have sharpened my English proficiency. You know, language environment really matters if I want to improve or at least keep up my English level. It would be better if the training programmes lasted longer and not so many people were enrolled each time.
(WeChat interview with P9, 28/October/2020)

P9’s viewpoint is shared by P8 who also strongly claimed the importance of English environment for an EMI teacher. In his words,

In the first two or three years after I came back from the UK, I had no worries at all about my English communication. But in recent years, I found my English ability falling short of my wishes to make each class a success, so I tried to grasp each training opportunity to go abroad to update my English. I even paid by myself as my uni or the department doesn’t finance my trips.

(Face-to-face interview, 4/November/2020)

As for the training format, in P9’s view, “workshops work best when everyone sits together, exchanging ideas and reflecting on [teaching/learning]. Such types of seminar would help us improve our English communication, help us better our teaching skills and keep up with the rest of the world”. Similarly, P6 stated that she would prefer to go abroad to observe EMI courses or disciplinary courses as a form of language training to enhance English language proficiency, if her institute could provide such opportunities.

The interview findings showed different types of need from the key and non-key universities although the survey indicated a similar level of demands. Teachers from non-key HEIs were more concerned about both their language competence and their pedagogies whereas those from key HEIs were more concerned about their teaching skills to bring about the students’ engagement in learning.

5. Discussion and conclusion

In this study, we investigated what institutional support and professional training programmes Chinese EMI teachers need in order to deliver effective EMI courses to achieve the goal of ‘killing two birds with one stone’. In doing so, we examined the similarities and differences
between EMI teachers from key HEIs and non-key HEIs with regard to institutional support and training programmes.

With regard to institutional support, factor analysis showed an insignificant difference. This indicates that lecturers from both types of HEIs had required their institutes to provide them with regular opportunities to observe and be observed by language pedagogical specialists and disciplinary experts. They expected their institutes to set up systems to allow them ‘going out’ to other EMI HEIs and ‘inviting in’ EMI colleagues to exchange and update both their teaching skills and disciplinary knowledge. The findings support those of Hu and Lei (2014), Hu and Duan (2019), Rose et al. (2020) and Yuan (2020; 2021) whose studies showed institutional absence of regular training for the EMI professionals.

But the participants’ need for restructuring of the teaching environments, such as reduced class size and more student-centred seminars showed significant differences between key and non-key HEIs. Teachers from non-key universities demonstrated a higher level of preference for changing classroom size and participation patterns. This finding is consistent with studies conducted by Hu and Li (2017), Jiang et al. (2019) in which teacher-fronted large classes were normal practices in many non-key HEIs. Such practices may have changed in key universities where class size already has been reduced. As most of key HEI’s EMI academics have been trained overseas and are familiar with the student-centred seminar teaching format, this was not a surprise finding. Their responses regarding EMI course workload issues also showed a different level of need. While those in non-key HEIs required more support as project-based rewards, their peers in key HEIs received more opportunities to apply for university-level grants and for overseas training and visiting. Interestingly, both groups of teachers needed more rewards in workload schemes. The findings echo those of Rose et al. (2020) and Yuan (2020), whose study
highlights issues related to EMI incentives, as workload weighting is “not reflective of the immense amount of work required to create an English taught course” (p. 23).

Within institutional support, the two groups also showed different needs for setting up EMI evaluation criteria and student learning outcomes. Compared to key university academics who considered EMI as a means to enhance students’ English academic skills in writing research publications, those in non-key universities regarded EMI as an illusion for achieving the dual goals of learning content knowledge and developing language skills.

In terms of training programmes, our study found that both groups required similar training in pedagogical skills as well as language and content knowledge upgrading. Academics in key HEIs considered pedagogical skills critical for them to engage students in higher cognitive discussion about academic subjects whereas their counterpart in non-key HEIs regarded such training essential to improve the students’ oral communication skills. It is interesting to note that despite their competence in using English, both groups emphasised their need for language training as they considered language critical for keeping up with the world. This suggests that efficient training programmes should include both language specialists and discipline professionals. The linguistic knowledge of the language specialists and their familiarity with the functions and forms of academic language can make important contributions to EMI development “through various forms of professional engagement” (Yuan 2021:11). Research suggests that collaboration between language specialists and EMI discipline lecturers can bridge the gap between language and content (Farrell 2020; Yuan 2021).

Our study has contributed to the field of EMI by illustrating the needs of EMI professionals in order for them to deliver effective EMI courses and for students to reap the potential benefits of such courses. Although studies have shown that discrepancies between
policy goals and classroom realities were deep and difficult to flatten out (Hu and Duan 2019; Hu and Lei 2014; Hu and Li; Rose et al. 2020), our study has shed some light on the practical and pedagogical needs of the EMI teachers. Our study also demonstrates that meso-level institutional support can provide concrete measures to improve the quality of EMI courses and enhance the students’ learning opportunities.

Given the differences between the two types of universities with regard to their EMI teachers’ needs, we call for more research to look into resource allocation, practical feasibility, and productive efficiency. We also call for more research to look into whether it is necessary to implement EMI courses across all universities in China given the differences in student needs and institutional capacity.

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