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A R T I C L E   I N F O

A B S T R A C T

What motivates people to learn a language other than English (LOTE) in addition to English? As distinct as the motivational systems to learn different languages might be, they can also be understood as different interconnected subsystems embedded in a larger system. Previous studies have argued that such motivational systems may be in constant interaction with each other, in co-adaption to the learning context, and lead to the emergence of an ideal multilingual self system. Following this argumentation, the current study examines the emergence of a multilingual motivational system among Chinese learners. English + LOTE (*E*-LOTE) learners were compared to English-only learners to uncover the special attributes in *E*-LOTE learners' motivations; then the relationship between the *E*-LOTE learners' motivation to learn English and to learn the LOTE was investigated. The results demonstrated that *E*-LOTE learners had a higher interest in English than the English-only learners and had established a more salient ideal English self. Moreover, the *E*-LOTE learners' motivation to learn the two languages interacted with each other over time. These results confirm the hypothesis that a multilingual motivational system emerges from the self-organization of the learner system and the co-adaption to the context.

1. Introduction

Motivation is important for second language learning. It explains why people choose to study a second language, how much effort they are willing to put into language learning, and how long they are going to maintain the effort (Dörnyei, 2000). However, current available studies on language learning motivation focus overwhelmingly on learning English as a second language, and little attention has been paid to languages other than English (LOTEs) (Boo, Dörnyei, & Ryan, 2015; Dörnyei & Al-Hoorie, 2017; Duff, 2017; Ushioda & Dörnyei, 2017), especially in monolingual contexts such as China (Boo et al., 2015).

With an increasing linguistic and cultural diversity in today's global community, there is a growing need to study the motivation to learn LOTEs and how this motivation may be different from the motivation to learn English (Ushioda, 2017). Among studies on the motivation to learn a LOTE, there is also a regional unbalance. Most studies deal with European languages in a European context, such as German, French and Spanish in Sweden (Henry, 2010), German in Hungary (Csizér & Luká), and minority languages in Spain (e.g. Lasagabaster, 2017) or with LOTEs in Anglophone countries, such as the motivation to learn Gaelic as a heritage language in Canada (e. g. Macintyre, Baker, & Sparling, 2017), and the motivation to learn Spanish, Chinese, Arabic etc. In the United States (e.g. Thompson,

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2017a).

Most studies thus far support the idea that learning an additional language is almost always simultaneous multilingual learning with English as one of the target languages (Dörnyei & Al-Hoorie, 2017) and the motivation to learn English as a global language is generally stronger than the motivation to learn a LOTE (Csizér & Dö; Dörnyei & Chan, 2013; Ushioda & Dörnyei, 2017). This also applies to the Chinese context (see Zheng, Lu, & Ren, 2019). Another finding is that learners who choose to study a LOTE alongside with English show a generally higher interest in foreign languages than those who plan to study English only (Dörnyei, Csizé).

For a long time, most studies have treated the motivation to learn different languages as separate entities, but Henry (2011, 2017) proposed that the motivational systems for learning different languages are interconnected constituents of larger motivational systems. This argumentation is based on the principles of Complex Dynamic Systems Theory (CDST) (de Bot, 2017; de Bot, Lowie, & Verspoor, 2007; Larsen-Freeman, 2017). From a CDST perspective, (language) learning is a complex and dynamic process. CDST focuses on the interconnectedness of components (or sub-systems) within a system, the co-adaption between the learner's system and the external context, and suggests that the interaction with the context gives rise to the emergence of new behavior (Hiver & Larsen-Freeman, 2019).

As a subsystem of the language learner system, the learner's language learning motivational system does not operate separately; instead, it interacts with other motivational systems and the environment (the context, in Larsen-Freeman and Cameron's (2008) terms) (Papi & Hiver, 2020). Environmental factors such as expectations from society, the educational system and parents may shape the learners' motivation to learn multiple foreign languages (Busse, 2017). In the same line of reasoning, Henry (2017) proposed that the ideal language self systems dynamically interact with each other, and the self-organization of the motivational systems for each language and their co-adaption gives rise to the ideal multilingual self system (Henry, 2017, 2020; Henry & Thorsen, 2018).

The current study is based on CDST tenets and the findings by Henry and Thorsen (2018) that the learners' ideal multilingual self system emerges from an interaction between an ideal Lx self and ideal Ly self. We adopted a bottom-up approach and tried to find empirical evidence for the interaction between the motivational systems to learn English and to learn a LOTE and the emergence of a multilingual motivational system. To do so, the current study compares the motivational systems of simultaneous English and LOTE (*E*-LOTE) learners with those of English-only learners at the beginning and at the end of their academic year, and examines the interconnectedness and interaction between the motivational systems for the two languages in the *E*-LOTE learners.

2. Literature review

2.1. Distinct motivations to learn English and LOTEs

When learning two or more languages, the motivational system for each language is found to be distinct from the other in certain respects. The positive attitude towards one language may exist to the detriment of the attitude towards the other due to a limited language learning capacity (Csizér and Dörnyei, 2005). Studies on the motivation to learn a LOTE have often adopted Dörnyei's (Dörnyei, 2005, 2009) model for learner motivation called the L2 Motivational Self System. This model is based on the 'possible selves' posed by Markus and Nurius (1986) and the 'self-discrepancy' theory by Higgins (1987). The model consists of three components, the ideal L2 self, ought-to L2 self, and the L2 learning experience. Ideal L2 self refers to the L2-specific aspect of one's ideal future self. Ought-to L2 self concerns the view on the future self which a learner believes he or she ought-to become in order to meet the expectations of others or to avoid negative outcomes. The L2 learning experience is concerned with the "situated, 'executive' motives related to the immediate learning environment and experience" (Dörnyei, 2009, p. 29).

When LOTEs are learnt in conjunction with English, distinct language selves are likely to be associated with different languages, competing with each other, often favoring English (Dörnyei & Al-Hoorie, 2017). As shown in a series of studies in Sweden, the learners of English and LOTEs (French, German or Spanish) had separate L2 self-concepts, with the English self as a winner if competition is assumed; moreover, the English self-concepts were of a referential function (Henry, 2010, 2011). In the Asian context, Dörnyei and Chan (2013) investigated the motivations of pupils in Hong Kong learning English and Mandarin in a parallel manner, and found that the different languages were associated with clearly different ideal language selves, forming distinct language-specific visions, which interfere with each other in both a negative and a positive way. In mainland China, simultaneous English and Japanese learners hold distinct ideal and ought-to language selves regarding each language: learners had a stronger ideal English self, particularly in the workplace, and a stronger ought-to Japanese self, as found by Wang and Zheng (2019).

The motivations for English and for a LOTE were also found to be distinct from each other in terms of developmental trajectories. Mercer (2011) studied a multilingual learner of L2 English and L3 Italian, who was interviewed 21 times over a period of two years. Compared to the L2 English learning motivation, which remained strong and relatively stable during the whole period of observation, the learner's L3 Italian motivation went through more fluctuations, both from a short-term and a long-term perspective.

2.2. Learning multiple languages as a complex dynamic system

Informative as the aforementioned studies are, Henry (2017) questioned the dichotomous approach to merely examine multilingual learners' motivations for the two languages as separate entities and proposed a more integrated view. In doing so, Henry and his colleagues followed Complex Dynamic Systems Theory (CDST, de Bot et al., 2007; de Bot, 2017; Larsen-Freeman, 2017). CDST is "a new way of thinking" that provides powerful concepts and principles to help us to interpret and theorize language learning motivation "in new ways that are grounded in a context-dependent and dynamic view of development" (Hiver & Papi, 2020, p.118). Language learning motivation is multifaceted, complex, and dynamic (Dörnyei, 2009; Waninge, Dörnyei, & de Bot, 2014) and embedded in

context and society (Serafini, 2020). As a complex dynamic system, such as the motivation system, develops, it may appear to settle in specific states showing relative stability during a certain period (de Bot et al., 2007). A system in such a state can shift its behavior when given sufficient force (Larsen-Freeman & Cameron, 2008), especially when it is adapting to changes in the context or in a connected system. The adaptation to changes or interaction with other interrelated systems enables the system to self-organize. Such self-organization may lead to a new phenomenon at a higher level, and this process is called 'emergence', with the emergent entities operating at a higher level of organization of complex dynamic systems (Larsen-Freeman & Cameron, 2008).

A language learner system is situated in multiple levels of context, including both the cognitive, cultural, pedagogical and social context and the physical and socio-political environment (Larsen-Freeman & Cameron, 2008). The context is not separable from the system and can be considered as its parameters or dimensions, influencing its developmental trajectory by contributing to phase shifts, self-organization and emergence (Larsen-Freeman & Cameron, 2008). The interrelationship between the learning individuals and the context is also dynamic. Ushioda's (2009) 'person-in-context' view of language motivation holds that motivation is "an organic process that emerges through the complex system of interrelations" (pp. 220) between the learning individual and multiple contextual elements. Such a view is also shared by Henry (2020) who suggested investigating the motivation to learn multiple foreign languages under the CDST principles of co-adaption between individuals and context and emergence.

2.3. Motivation to learn English vs. LOTE in the context of China

The social context can largely shape the learner's motivation to learn another language (Thompson, 2017). In the European context, especially in northern Europe, the simultaneous learning of more than two foreign languages is considered to be the norm among many secondary pupils (Henry, 2010). In China, however, pupils in primary and elementary education learn only one foreign language, which is almost always English. Learning another foreign language is not mandatory, and almost always occurs at university, particulary among foreign language majors. However, there has been a steady overall increase recently (Gao & Zheng, 2019).

Liu (2020) explored the relationship between positive and negative emotions with the ideal multilingual self in a Chinese context and found a profound impact of English on the multilingual learners' ideal multilingual self. The study demonstrated that a stronger ideal multilingual self was associated with positive emotions that learners experienced in both English and LOTE learning. However, compared to a negative emotional experience in LOTE learning, a negative emotion involved in English learning was more likely to affect the ideal multilingual self. In other words, considering the length of time the learners had already spent on English learning and the immense instrumental value placed on English, "the learning of English is more personally relevant to the students than LOTEs" (pp. 14) in a Chinese context. The challenges and setbacks on English learning, compared to LOTE learning, have a more profound and far-reaching affective impact on Chinese learners and potentially jeopardize their sense of self in becoming multilingual users.

A crucial role of English in Chinese learners' multilingual motivation was also found by Zheng et al. (2019), who explored the motivational profiles of simultaneous English and Spanish learners. They examined two groups: Group A consisted of English majors who voluntarily chose to learn Spanish and Group B consisted of Spanish majors who had not really opted for Spanish and simultaneously took English as a minor. Starting from Higgins' (1987) 'self-discrepancy' theory, the study identified four types of motivation: *self-motivated* with multilingual posture versus instrumentality, and *other-motivated* with promotion-focused instrumentality versus prevention-focused instrumentality. The *other-motivated* learners were "subjugated" (pp. 590) to the sociological influences of English in China and the prevalent status of English emphasized by the national foreign language policy.

In another study on English-Spanish learners' motivation, Lu, Zheng, and Ren, (2019) found that the Spanish majors in their study could be divided into two groups, one being the multilingual group with a clear English orientation, and the other being the 'strong Spanish group'. Students in the multilingual group were profoundly influenced by their ideal English selves, and they learned Spanish only because of academic pressure. Students in the 'strong Spanish group' had a strong motivation to learn Spanish well; however, this was not driven by a strong ideal Spanish self, but rather a strong ought-to Spanish self. Neither group had developed a strong ideal Spanish self. They concluded that English, enjoying a higher instrumental value, impacts negatively on Spanish learning in a Chinese social and pedagogical context. In other words, the Chinese multilingual learners' motivation to learn a LOTE is not yet internalized.

2.4. The emergence of a multilingual motivational system

The abovementioned studies in the context of China have identified the impact of English on learners' LOTE-related motivation and their future self vision at one moment in time. However, the complex and dynamic relation between the languages and the learning context requires a holistic, dynamic and relational view to study the motivation involving multiple languages (Zheng, Lu, & Ren, 2020) and changes over time. From a CDST perspective, Zheng et al. (2020) tracked 15 Chinese simultaneous learners of English and Spanish at the university level in terms of their developmental trajectories in motivation for 1.5 years, during which their learning context changed. Two motivational profiles were detected, one with a dominating translingual and transcultural orientation, and the other with a dominating instrumental orientation. As time went by and the learning context changed (studying abroad), the two motivational profile developed along different routes. The authors suggested that multilingual learners' language motivational systems are in continuous self-organization and adaptive interaction with the learning context. Therefore, dichotomous thinking about L2 motivation and LOTE motivation and the segregation of learner motivation and context should be avoided.

In a similar vein, Henry (2017) suggested that the multilingual learner's self guides for each language are in constant interaction, leading to the reorganization of the motivational systems. According to Henry and Thorsen (2018), an ideal multilingual self system emerges from the interaction between the ideal Lx self and ideal Ly self. Following this line of reasoning, the current study sets out to identify whether there is an emergent multilingual motivational system among the Chinese *E*-LOTE learners. Different from the

previous studies in the Chinese context that assume the existence of a multilingual motivational system as a default, such as the ideal multilingual self, the current study examines possible preconditions in developing a multilingual motivational system. Moreover, the current study assumes that the multilingual motivational system emergences through the interaction between the motivational systems of each language.

To do so, two steps were taken. First, we compared the characteristics of *E*-LOTE learners' motivation to learn English to that of English-only learners. Second, we explored the relationship between the motivation to learn English and the motivation to learn a LOTE, and their interaction over time in *E*-LOTE learners. The research questions are the following:

(1) What are (a) the initial status and (b) the development of the motivation to learn English in *E*-LOTE learners compared to English-only learners?
(2) How do the *E*-LOTE learners' motivations for each language (a) relate to each other and (b) compare at the beginning of the academic year, and (c) interact over time?

We assume *E*-LOTE learners have a general interest in languages, which is associated with a highly developed ideal language self (Dörnyei et al., 2006), and therefore, are more motivated to learn English than English learners. The general interest in languages serves as a starting point to develop a multilingual motivation system. In line with the CDST perspective that initial conditions will influence the development of a system (de Bot et al., 2007), we expected that different initial conditions in the motivation to learn English between the *E*-LOTE majors and English majors would lead to different development. As for the second question, we hypothesized that *E*-LOTE learners' motivations to learn English and a LOTE are correlated. However, given the dominant status of English in China, the motivation to learn English is assumed to be stronger than the motivation to learn a LOTE (Zheng et al., 2019). In accordance with CDST principles that all subsystems are interconnected and interact with each other as well as the context (Henry, 2020; Papi & Hiver, 2020), we expected that there would be an interaction between the motivation for the two languages leading to the emergence of a multilingual motivational system operating at a higher level than the motivation for each individual language and regulating the motivation to learn two languages.

3. Methodology

To test whether *E*-LOTE learners' have a peculiar attribute regarding language learning motivation, the current study compared *E*-LOTE majors with English majors in terms of their initial conditions as well as the development over time of their motivation to learn English. Secondly, to test if there is any sign of a multilingual motivational system emerging, the present study examined the initial relationship between the motivations to learn two languages, as well as how it develops over time. The study has a pre-and-post design with an interval of 9 months. In both groups, the survey on the motivation to learn English was administrated at the beginning (before any courses had started) and at the end of the academic year for both English learners and *E*-LOTE learners. The *E*-LOTE learners also took a LOTE motivation survey both times.

3.1. Participants

The participants were foreign language majors recruited from a Chinese university. This university provided both a normal foreign language program and a bi-foreign-language program. In the normal program, students study English as a major and start to learn a LOTE as a minor (with very limited instruction time) from the second year on. In contrast, in the bi-foreign-language program, the students learn English and a LOTE from the first year on, both with a high amount of instruction. All the participants were in their first year of university. The LOTEs involved are Russian and Japanese, the second and third popular foreign languages respectively in China (Wei & Su, 2012). To be admitted to this university, applicants have to obtain a certain minimum score on the China National Higher Education Entrance Examination, and the entry scores for English majors and *E*-LOTE majors were the same, indicating a comparable academic aptitude in both groups. Table 1 shows the details of the participants and the amount of instruction time for each language.

3.2. Instruments

The instruments used are questionnaires. For English, the questionnaire was the Chinese version of the English learner motivation questionnaire designed and tested in Taguchi, Magid and Papi`s (2009) study. The Japanese and Russian motivation questionnaires were almost identical to the English learning motivation questionnaire but *English* was replaced by either *Russian* or *Japanese*. Table 2 shows the 10 components of the questionnaire.

Table 1
Participants.

Language Groups	*E*-LOTE majors		English majors
Language	E-Japanese	E-Russian	English
Sample Population	23	25	15
Instruction time	English: 16		English: 16
h/week	Japanese or Russian: 8		

Both *E*-LOTE majors (48 in total) and English majors (15 in total) filled out the English learning motivation questionnaire, 23 English-Japanese majors filled out the Japanese questionnaire and 25 English-Russian majors filled out the Russian questionnaire. All of the questionnaires were filled out twice, i.e. at the beginning and at the end of the academic year. The reliability of the questionnaires was tested by running Cronbach's Alpha tests. Table 3 shows the details of the factors and their Cronbach's Alpha coefficients for the three questionnaires.

According to Dörnyei and Csizér (2012), any coefficient below 0.60 is problematic. In our dataset, the coefficients for Integrativeness in the English and the Japanese questionnaires were below this threshold, thus the factor Integrativeness was excluded from the following analyses for all languages. The fact that the factor Integrativeness was not reliable in the sample population in the current study meets claims from previous studies (e.g. Coetzee-Van Rooy, 2006; Dörnyei, 2010). It is argued that Integrativeness is not a tenable motivation factor in a context where English is learned as a global language and the learners are not exposed to the native English speaking community; thus there is no integrative purpose for learning English in our sample. The same applies to Japanese.

3.3. Analyses

An independent samples *t*-test was used to compare how the English majors and *E*-LOTE majors differ from each other in terms of motivation to learn English at the beginning of the academic year (RQ1a). Significant differences would suggest that *E*-LOTE learners differ from English learners from the very beginning. To find out whether the English majors and the *E*-LOTE majors develop in a dissimilar manner in terms of motivation to learn English (RQ1b), a two-way mixed ANOVA (testing time × group) test was used. A significant interaction between time (pre/post) and group (English/*E*-LOTE majors) would suggest that the groups' motivational system to learn English develops in a different manner.

A Pearson's correlation analysis was used to test how the *E*-LOTE learners' motivation to learn English and the motivation to learn a LOTE are related at the beginning of the academic year (RQ2a). Significant correlations would suggest that the *E*-LOTE learners' motivation to learn a LOTE is (partly) related to their motivation to learn English from the start. A paired samples *t*-test was used to find out whether the *E*-LOTE learners' motivation to learn English differs from their motivation to learn a LOTE at the beginning of the academic year (RQ2b). Any significant difference between the motivational aspects of different languages would suggest that the students start out with different levels of motivation for each language. To explore whether *E*-LOTE learners' motivations for the two languages develop in a different manner (RQ2c), a two-way mixed ANOVA (time × language) was run. Any significant interaction between time (pre/post) and language (LOTE/English) would indicate a significantly different development in motivation regarding the two languages.

4. Results

RQ1 compares *E*-LOTE majors with English majors in the motivation to learn English. Fig. 1 gives a data overview of the motivation to learn English in *E*-LOTE majors and English majors. It shows that *E*-LOTE majors started with higher scores than English learners in all aspects of motivation to learn English, and suggests that *E*-LOTE majors developed in a different way compared to the English majors in some aspects of motivation to learn English. The analyses will show whether the differences are significant.

RQ1a: As shown in Table 4, at the beginning of the academic year, the *E*-LOTE learners started with a significantly higher motivation to learn English in the aspects of instrumentality-promotion, ought-to self, ideal self, learning experience and attitude toward target language community. In the other four aspects, the difference between the two groups did not reach a significant level.

RQ1b: As shown in Table 5, the results of the two-way mixed ANOVA test reveal interactions between time and group in the aspects of family influence (FI), ought-to language self (OLS), instrumentality-promotion (IPRO), and attitude towards language community (ALC) concerning the motivation to learn English. In family influence and ought-to language self, both *E*-LOTE and English learners increased from the pre-to the post-test, but the increase of the English group was significantly greater. In the aspects of instrumentality-

Table 2
Details of the ten components of the motivation questionnaire.

Motivational factors	Details of the motivational factors
Ideal L2 self (ILS)	The L2-specific facet of one's ideal self
Ought-to L2 self (OLS)	The attributes that one believes one ought to possess (i.e., various duties, obligations, or responsibilities) in order to avoid possible negative outcomes
L2 learning experience (LE)	The situation-specific motives related to the immediate learning environment and experience
Family influence (FI)	The active and passive parental roles.
Criterion measures (CM)	Learners' intended efforts toward learning English.
Instrumentality-promotion (IPRO)	The regulation of personal goals to become successful such as attaining high proficiency in English in order to make more money or find a better job
Instrumentality-prevention (IPRE)	The regulation of duties and obligations such as studying English in order to pass an examination
Culture interest (CI)	Learner's interest in the cultural products of the L2 culture, such as TV, magazines, music and movies
Attitudes to L2 community (ALC)	Learners' attitude towards the community of the target language
Integrativeness (INT)	Positive attitude towards the language, its culture, and the native speakers of that language

Note: Adapted from Dörnyei (2005, p.106) and Taguchi, Magid, and Papi (2009, p.74-p75).

Table 3

Components of motivation factors with Cronbach Alpha coefficients.

Factor name	Item numbers	Cronbach Alpha coefficients		
		English	Japanese	Russian
Family influence	2, 11, 21, 30, 40	0.73	0.63	0.70
Criterion measures	3, 13, 23, 31, 37, 45	0.75	0.82	0.85
Instrumentality-promotion	4, 10, 16, 22, 28, 35, 41, 48	0.85	0.87	0.84
Ought-to language self	5, 12, 19, 27,36, 42, 49	0.84	0.73	0.89
Ideal language self	6, 14, 29, 38, 46	0.74	0.91	0.89
Instrumentality-prevention	7, 18, 25, 33, 43	0.90	0.87	0.84
Learning experience	50, 55, 60, 65	0.80	0.78	0.77
Cultural interest	53, 58, 63	0.61	0.71	0.71
Attitudes to community	54, 59, 64, 67	0.75	0.78	0.77
Integrativeness	52, 57, 62	0.55	0.57	0.68

error bars: +/-0.5sd
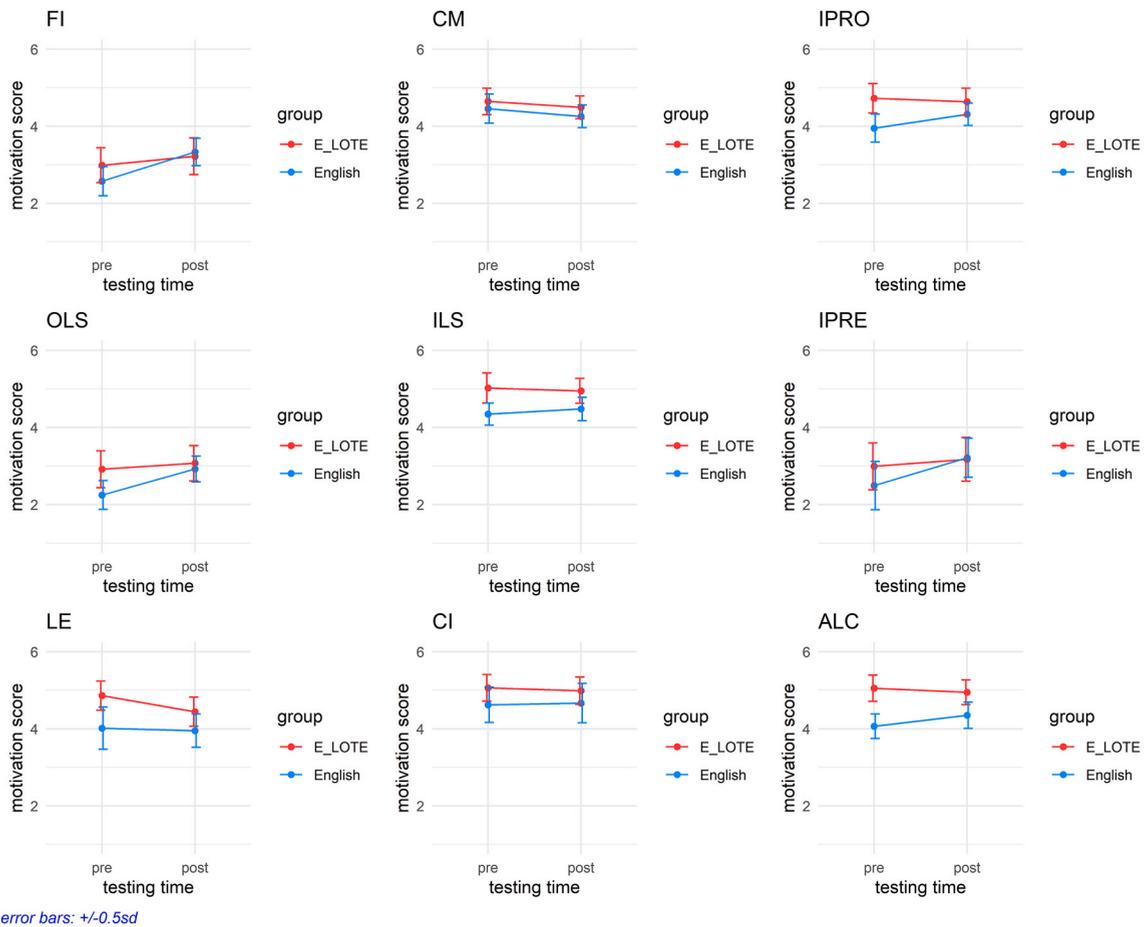
Fig. 1. Motivation to learn English in *E*-LOTE versus English learners.

promotion and attitude towards the language community, the changes differed in direction; more precisely, while the *E*-LOTE group's motivation decreased slightly, the English group's motivation increased.

RQ2 investigates *E*-LOTE learners' motivation to learn a LOTE and English over time. Fig. 2 gives an overview of the data. In general, *E*-LOTE majors had lower scores in the motivation to learn the LOTE than that to learn English in the pre-test, and ended with lower scores for LOTE than for English in most of the motivational aspects. The relationship between the motivations for the two languages was examined in RQ2a and RQ2b, and how the motivations for the two languages developed is answered by RQ2c.

RQ2a: Table 6 shows the correlation between the motivation to learn the LOTE and the motivation to learn English. The results show that the two were significantly and positively correlated in all nine factors, indicating that the higher the starting motivation of the *E*-LOTE majors to learn English is, the higher their starting motivation to learn the LOTE is.

RQ2b: Table 6 also shows the results of the paired samples *t*-test. *E*-LOTE learners started with a significantly lower motivation to

Table 4

Motivation scores to learn English for *E*-LOTE and English majors in the pre-test.

	E-LOTE learners		English learners		Differences	
	N	Mean (SE)	N	Mean (SE)	t (61)	r^2
Family influence	48	**2.99(0.13)**	15	2.57 (0.20)	−1.61	/
Criterion measures	48	**4.64(0.10)**	15	4.46 (0.20)	−0.90	/
Instrumental-promotion	48	**4.72(0.11)**	15	3.95 (0.19)	−3.46**	0.16
Ought-to self	48	**2.92(0.14)**	15	2.25 (0.19)	−2.48*	0.09
Ideal self	48	**5.03(0.11)**	15	4.35 (0.15)	−3.11**	0.14
Instrumental-prevention	48	**2.99(0.18)**	15	2.49 (0.32)	−1.37	/
Learning experience	48	**4.86(0.11)**	15	4.02 (0.28)	−3.37**	0.16
Culture interest	48	**5.06(0.10)**	15	4.62 (0.24)	−1.99	/
Attitude to community	48	**5.05(0.10)**	15	4.07 (0.16)	−4.93***	0.28

Note: *, difference is significant at 0.05 level; **, difference is significant at 0.01 level; ***, difference is significant at 0.001 level. A higher motivation is marked in bold print.

Table 5

Significant differences in the development of English motivation between *E*-LOTE and English learners.

	E-LOTE learners		English learners		Two-way Mixed ANOVA	
					time*language interaction	
	N	M (SE)	N	M (SE)	F (1,61)	η_p^2
Family influence						
Pre-test	48	**2.99(0.13)**	15	2.57 (0.23)	**4.86***	**0.07**
Post-test		3.22 (0.13)		**3.33(0.23)**		
Instrumental-promotion						
Pre-test	48	**4.72(0.11)**	15	3.95 (0.20)		
Post-test		**4.64(0.10)**		4.31 (0.11)	**5.09***	**0.08**
Ought-to self						
Pre-test	48	**2.92(0.13)**	15	2.25 (0.24)	**7.34****	**0.11**
Post-test		**3.07(0.13)**		2.92 (0.23)		
Attitude to language community						
Pre-test	48	**4.86(0.12)**	15	4.02 (0.22)	**4.22***	**0.07**
Post-test		**4.44(0.11)**		3.95 (0.20)		

Note: *, effect is significant at 0.05 level; **, effect is significant at 0.01 level; ***, effect is significant at 0.01 level. A higher motivation is marked in bold print.

learn the LOTE than that to learn English in all aspects except for instrumentality-prevention (IPRE) and learning experience (LE), where there were no significant differences.

RQ2c: Table 7 shows the results of the two-way mixed ANOVA. Significant time × language interactions were found in two aspects of motivation: instrumentality-promotion (IPRO) and language learning experience (LE). Instrumentality-promotion increased in the motivation to learn the LOTE and decreased in the motivation to learn English. Learning experience remained stable in the motivation to learn the LOTE and decreased in the motivation to learn English.

5. Discussion

5.1. E-LOTE learners had higher and more stable motivation to learn English

Although both groups of learners had been learning English for around 9 years before entering university, the *E*-LOTE majors had a higher motivation to learn English than the English majors in five out of nine motivational aspects at the start of the observation. The five aspects are instrumentality-promotion, ought-to L2 self, ideal L2 self, language learning experience and attitude towards the target language community. In these five aspects, ideal L2 self, ought-to L2 self, and language learning experience together are the three components of L2 MSS (Dörnyei, 2005, 2009). This indicates that the *E*-LOTE learners had a more positive L2 English learning experience in the past, and they had already developed a firmer future vision for themselves as English users. Moreover, as stated by Dörnyei (2010), instrumentality and attitude towards the target language speaking community are the "immediate antecedents" (p.79) of the ideal L2 self. In other words, "in our idealized image of ourselves we may want to be not only personally agreeable but also professionally successful" (p.79) in the target language.

In sum, we can safely conclude that *E*-LOTE learners started with a higher motivation to learn English, indicating a higher interest in languages in general. Such a higher interest in foreign languages is often associated with a highly developed ideal language self formed in the previous learning experience (Dörnyei et al., 2006). This positive experience is often associated with higher language self-efficacy, i.e. students' judgement on their capability to perform language-related tasks and reach a certain proficiency, which in turn leads to lower anxiety in the language classroom (Piniel & Csizér, 2013) and can sustain the effort to learn foreign languages (de
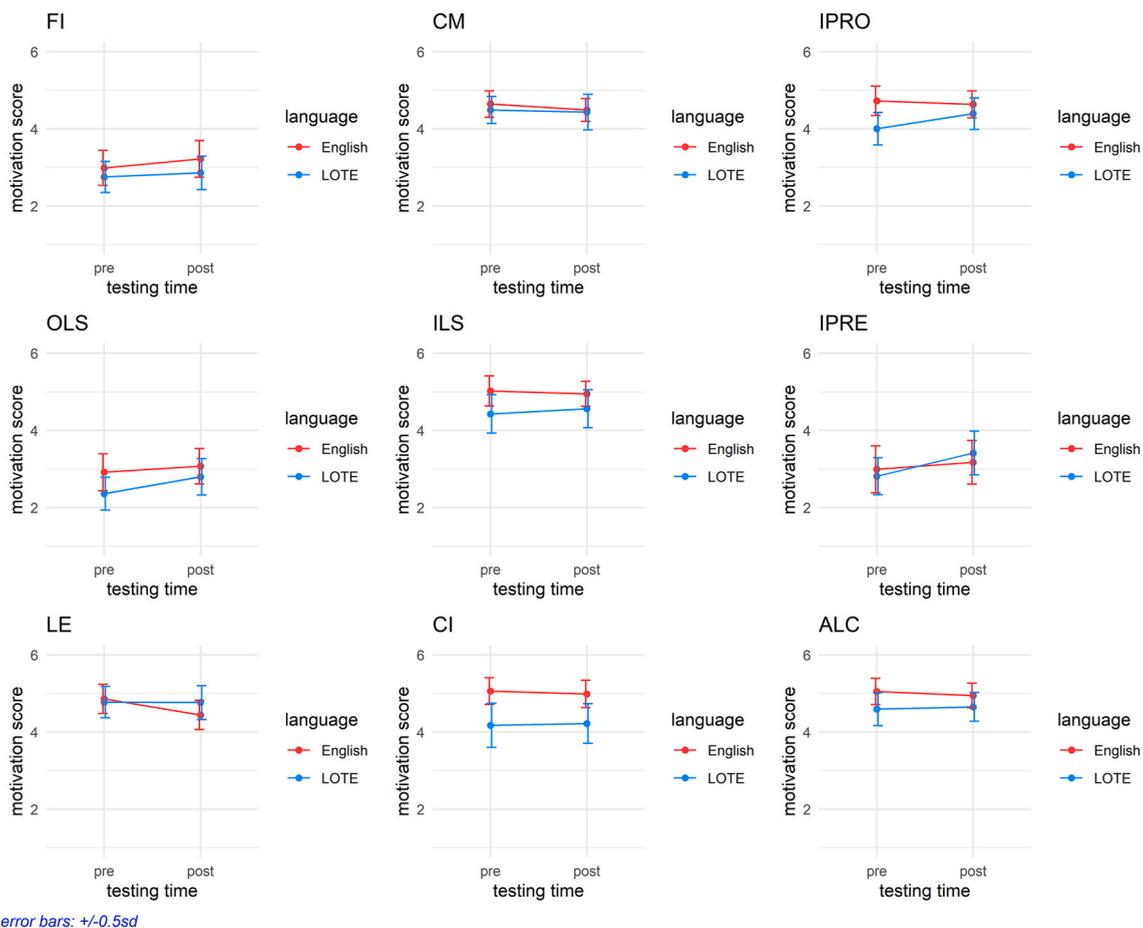
Fig. 2. Motivation to learn LOTE versus English in *E*-LOTE learners over time.

Table 6
Motivation scores to learn English and LOTE for *E*-LOTE learners at the pre-test.

	M-LOTE	M-English	Correlations	Differences	
	Mean (SE)	Mean (SE)	r	t (47)	r²
Family influence	2.75 (0.12)	**2.99(0.13)**	0.70***	2.42*	0.11
Criterion measures	4.49 (0.10)	**4.64(0.10)**	0.73***	2.06*	0.08
Instrumental-promotion	4.00 (0.12)	**4.72(0.11)**	0.67***	7.60***	0.55
Ought-to self	2.36 (0.12)	**2.92(0.14)**	0.80***	6.56***	0.48
Ideal self	4.43 (0.14)	**5.03(0.11)**	0.61***	5.10***	0.36
Instrumentality-prevention	2.81 (0.14)	**2.99(0.18)**	0.74***	/	/
Learning experience	4.78 (0.12)	**4.86(0.11)**	0.39**	/	/
Culture interest	4.17 (0.16)	**5.06(0.10)**	0.47**	6.03***	0.44
Attitude to community	4.60 (0.12)	**5.05(0.10)**	0.69***	5.11***	0.36

Note: **, correlation or difference is significant at 0.01 level; ***, correlation or difference is significant at 0.001 level. A higher motivation is marked in bold print. *M*-LOTE, motivation to learn LOTE; M-English, motivation to learn English./, differences are not significant.

Burgh-Hirabe, 2019). The finding that the *E*-LOTE learners are more motivated to learn English than the English majors supports Zheng et al.'s (2019) argument: English acts "as a gatekeeper that mediates language learners' complex decision processes involved in multilingual learning in non-Anglophone contexts" (p. 601). In our sample, learners with a better experience of and higher motivation for learning English are those to embark on learning an additional language and becoming multilingual learners.

The *E*-LOTE learners differed from the English majors not only in the initial conditions of the motivation to learn English, but also in the manner their motivation developed over time. In CDST it is assumed that small differences in initial conditions may dramatically affect developmental trajectories in the long run (Hiver & Papi, 2020, pp. 117–137), and thus the different initial conditions of the motivation to learn English between *E*-LOTE and English learners may have led to different developmental trajectories in the two

Table 7
Differences in the development of LOTE and English motivation within *E*-LOTE majors.

	N	*M*-LOTE	M-English	Two-way Mixed ANOVA	
				time*language interaction	
		M (SE)	M (SE)	F (1,61)	η_p^2
Instrumental-promotion					
Pre-test	48	4.00 (0.12)	**4.72(0.12)**	**10.44****	**0.10**
Post-test		4.39 (0.11)	**4.64(0.11)**		
Learning experience					
Pre-test	48	4.78 (0.11)	**4.86(0.11)**	**4.41***	**0.05**
Post-test		**4.77(0.12)**	4.44 (0.12)		

Note, *, effect is significant at 0.05 level; **, effect is significant at 0.01 level. *M*-LOTE, motivation to learn LOTE; M-English, motivation to learn English.

groups. The difference reached a significant level in the aspects of family influence, instrumentality-promotion, ought-to self, and attitude to the language community. The *E*-LOTE learners remained relatively unchanged during the 9 months of observation; in contrast, the English majors, experienced an increasing trend and even surpassed (not significantly) *E*-LOTE majors in the post-test in family influence. In contrast to the *E*-LOTE majors, who were able to sustain the English language learning effort at a relatively higher level thanks to the salient ideal L2 self established, the English majors had not established any evident ideal L2 self. Instead, the four motivational aspects in which they showed an increase indicated that their motivation for English learning tended to be driven more by outside forces: by what they think they should be to meet outside expectations or avoid negative outcomes, by the affective side of language, and by the pragmatic instrumental aspects or incentives related to language proficiency.

Because of a higher interest in languages and the establishment of a more salient ideal L2 (English) self (Csizér & Dö; Dörnyei et al., 2006) to begin with, the *E*-LOTE learners were able to sustain a higher and relatively more stable motivation to learn English over time than the English learners. This is also an indication that the *E*-LOTE learners' motivation to learn English had already reached an attractor state in the motivation to learn English, unlike the English learners. All in all, *E*-LOTE learners differed in terms of the motivation to learn English from the English learners, both in initial conditions and developmental trajectories. A well-established ideal English self is a distinction between *E*-LOTE learners and English learners, and may be the reason for the *E*-LOTE learners to learn another foreign language other than English. For the *E*-LOTE learners, a strong ideal English self may thus be considered a precursor for a multilingual motivational system to emerge.

5.2. Distinct but interconnected motivational systems for English and LOTE

Although the *E*-LOTE learners' motivation to learn a LOTE was significantly lower than that to learn English in many aspects, with instrumentality-prevention and language learning experience as two exceptions, the two correlated with each other significantly and positively. This result supports the idea that the motivation to learn a LOTE exists under the shadow of the dominant motivation to learn English (Csizér & Dörnyei, 2005; Henry, 2010, 2011), but in the meantime, the motivational systems, or self guides, for each language within the learner system are interconnected (Henry, 2017). English still plays a dominant role in their daily learning, which is in line with the findings in previous studies (e.g. Mercer, 2011; Wang & Liu, 2017; Wang & Zheng, 2019; Zheng et al., 2019), and perhaps even more so in the Chinese context, where English is associated with substantial educational, social and economic opportunities (Zheng et al., 2019).

As for the two exceptions, instrumentality-prevention and language learning experience, the *E*-LOTE learners did not show any difference for the two languages. The instrumentality-prevention represents the learners' fear of failure and the desire to fulfill the duties and obligations as a student to avoid any possible negative consequences (Islam, Lamb, & Chambers, 2013). This aspect of motivation, not necessarily language-related, is common among Chinese students, given that the expectations from others, particularly their family, are important (Magid, 2009). Instrumentality-prevention was referred to as the 'Chinese imperative' by Chen, Warden, and Chang (2005), namely the internalized value of exam success enforced by societal, educational, and familial expectations (You & Dörnyei, 2016). These expectations affect the motivation for LOTE and English in a similar way.

As for language learning experience, this concerns the "situated, executive motives related to the immediate learning environment and experiences" (Dörnyei, 2009, pp. 29). The pre-test was carried out before the participants started to have any LOTE classes; therefore, the English learning experience was the previous English learning experience, while the LOTE experience was, to a large extent, the participants' expectations of the future LOTE learning experience. The fact that no significant difference was found between the LOTE and English learning experience may be simply because the participants had not had a specific LOTE learning experience at all; thus, they may have felt that it would be about the same as English. These findings support the notion that learners' motivational systems are embedded in, and in interaction with, the societal context of the learners (Busse, 2017; Papi & Hiver, 2020; Zheng et al., 2020).

The idea of an interconnection between the motivational systems for different languages is supported by the empirical evidence in the present study. The *E*-LOTE learners' motivations for the different languages are positively correlated at the beginning of the observation, indicating the existence of a larger identity system, i.e. a multilingual identity system (Henry, 2017; Henry & Thorsen, 2018) with the motivational systems for the different languages as interconnected constituents. The existence of a multilingual

identity, along with the language-specific identities, has the potential to influence the learner's motivation to learn languages (Henry, 2017). The interaction between the motivational systems for each language as well as the co-adaption between the motivational systems and the external context leads to the emergence of a motivational system functioning at a higher level than the combination of the subsystems (Henry, 2020).

5.3. The emergence of a multilingual motivational system

According to Henry (2017), the "interactions between Lx and Ly self guides lead to the emergence of multilingual self guides" (p550), and thus we consider the interaction between the motivation to learn English and motivation to learn LOTE as an indicator of the emergence of a multilingual motivational system. Two aspects of the *E*-LOTE learners' motivation–instrumental promotion and learning experience–showed interactions between English and LOTE. With regard to instrumental promotion, the increase for the LOTE was significantly higher than that for English, indicating that our participants saw a "competitive edge" of the LOTE in the global job market (Dörnyei & Al-Hoorie, 2017; Ushioda, 2017). The increase in learning experience in the LOTE co-adapts with the decreasing value attached to English in the job market. English now seems to be a common skill among all candidates and thus a less common third language might provide a competitive edge in job searches (Siridetkoon & Dewaele, 2018). The *E*-LOTE learners gradually formed different visions for each language, and a career associated with the LOTE became more 'visible' for them. However, the participants were first year university students, therefore, it is difficult to predict whether these increased instrumentality-promotion values attached to learning the LOTE would be sustained in a long run. For example, Wang and Zheng (2019) found that due to the frustrating job hunting experiences, senior LOTE learners of Japanese often regret having taken Japanese as a major. In the Chinese context, English still opens more opportunities than LOTEs.

As for the learning experience, the *E*-LOTE learners experienced a striking decrease in their English learning experience. This decline could be a result of a co-adaption to the changing context. On the one hand, the learners were experiencing a transition from a high school to a university learning context, which means most of the learners had to adapt from a more examination-driven learning mode with a clear and straightforward purpose to an interest-driven and more autonomous learning mode with long-term goals but fewer short-term rewards. This result again shows that language learning motivation is "situated and thus contextually constrained" (Hiver & Papi, 2020, p. 122). On the other hand, the *E*-LOTE learners were also learning a LOTE, which was a completely new language for them. Learners may be experiencing a stronger sense of achievement in LOTE learning than in English learning as they had already been learning English for around 9 years. As for the LOTE learning experience, the results suggest that the learners' actual learning experience at the post-test met their expectance at the beginning.

Following Henry's (2017) argumentation that the "interactions and mutual adjustments of the system's different elements […] bring about different states of higher-order coherence around particular properties" (p. 551), we suggest that a multilingual motivational system, a "higher-order coherence", emerged from the interconnectedness between the different language motivational systems, and from the co-adaption between the motivational systems and the context. A salient existing L2 (in this case, English) self seems to be the antecedent/prerequisite to form a multilingual motivational system, as those learners are genuinely interested in foreign languages and want to diversify their language repertoire (Wang & Zheng, 2019). In the subsequent learning process, the learners are then actively "searching for multilingual self development" (Lu et al., 2019), p. 83) and the motivational system for each language co-adapts to the other and to changes in the context. It is in this process that a multilingual motivational system emerges.

6. Conclusion and limitations

Our current understanding of the motivation to learn a LOTE is still limited (Ushioda & Dörnyei, 2017) but the present study has confirmed several previous findings. Most of the LOTE learning goes hand in hand with the learning of English (Dörnyei & Al-Hoorie, 2017), and learners develop distinct visions or motivations for each language involved (Dörnyei & Chan, 2013; Henry, 2011; Wang & Zheng, 2019). However, the motivational system of each language is also embedded in a larger multilingual identity system. An ideal multilingual self system functioning at a higher level of abstraction emerges from the connectedness and interactions between the ideal language selves for each language and the co-adaption between the learner system and the learning environment (Henry, 2017, 2020; Henry & Thorsen, 2018). The present study compared Chinese *E*-LOTE learners to English-only learners, and explored the potential emergence of a multilingual motivational system in the *E*-LOTE learners. The results showed that *E*-LOTE learners showed a higher motivation to learn English to begin with, a robust ideal English motivation as an initial condition, and more stability in their development. The *E*-LOTE learners' motivation to learn English was stronger than their motivation to learn a LOTE, but the two correlated significantly and interacted with each other over time, pointing to the emergence of a multilingual motivational system.

Even though the findings are informative, the study has limitations, which may be improved upon in future studies. One concerns the instrument. To compare the motivation to learn English and the LOTEs, the current study adopted a questionnaire designed for English to measure the motivation to learn LOTEs. However, as suggested by Dörnyei and Al-Hoorie (2017), the conceptualizations of L2 motivation to learn English may not be fully adequate to capture the full picture of the motivation to learn a LOTE. In addition, the dynamic interaction of the learners with the learning context is potentially missing from the L2MSS framework (Thompson, 2017b). Therefore, future studies investigating the motivation to learn a LOTE are encouraged to use questionnaires or other instruments designed to tap into a dedicated concept for LOTE learning motivation, and follow-up interviews are strongly recommended to uncover the details of the complexity and dynamics in motivation over time. Moreover, the current paper used a bottom-up approach and indirectly inferred the emergence of a multilingual motivational system among the *E*-LOTE learners from correlations and interactions between the motivations for the two languages over time. Such an inference needs to be made with caution. Ideally, future studies

should combine this method with a top-down method by adding a questionnaire dedicated to measuring the multilingual motivational system, such as the ideal multilingual self items used in Henry and Thorsen (2018). Another limitation concerns the density and duration of the observation. To track motivational dynamics in more detail, future studies should adopt a more intensive observation method. Moreover, as learners' motivation to learn LOTE were found to fluctuate over a longer period (see Wang & Liu, 2017), the findings about the development in motivations here are only constrained to the first year of studying at the university level.

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Declaration of competing interest

We have no known conflict of interest to disclose.

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