

LANGUAGE, TECHNOLOGY, AND SOCIAL MEDIA

ISSN: 3026-7196

Attitudes Toward Sustainable Environmental Education and International Posture in Pre-Service EFL Teachers: A Correlational Study

Tuğba Özmantar ✉ **and Ayşe Nesil Demir Yastıbaş*** ✉

To cite this article. T. Özmantar and A. N. D. Yastıbaş, "Attitudes Toward Sustainable Environmental Education and International Posture in Pre-Service EFL Teachers: A Correlational Study," *Lang. Technol. Soc. Media*, vol. 4, no. 4, pp. 600–622, 2026.
DOI: https://doi.org/10.70211/ltsm.3026-7196.832

To link to this article:

Published online: 03 November 2026

Submit an article to this journal

View crossmark data

Watch the video on YouTube

Full Terms & Conditions of access and use can be found at
https://journal.wiseedu.co.id/index.php/ltsmjournal/about

OPEN ACCESS

Language, Technology, and Social Media Vol 4 No 4 (2026) https://doi.org/10.70211/ltsm.3026-7196.832

Check for updates

Research Article

Attitudes Toward Sustainable Environmental Education and International Posture in Pre-Service EFL Teachers: A Correlational Study

Tuğba Özmantar and Ayşe Nesil Demir Yastıbaş*

Received: 21 July 2026	Revised: 19 August 2026	Accepted: 31 October 2026	Online: 03 November 2026

Abstract

International posture (IP), a motivational disposition toward the international community that underlies L2 willingness to communicate, has been explained mainly by language exposure and intercultural contact; whether it also relates to values regarding global issues has rarely been examined. This correlational study examined the relationship between pre-service English as a Foreign Language (EFL) teachers' attitude towards sustainable environmental education (SEE-A) and the four dimensions of IP. The participants were 172 pre-service teachers in an English Language Teaching program at a state university in Türkiye, selected through convenience sampling, who completed a 27-item environmental attitude scale and the International Posture Scale. SEE-A correlated weakly and positively with all four IP dimensions ($r = .15$ to $.21$), corresponding to 2%–4% shared variance; only the link with having things to communicate to the world remained significant after Holm's correction, and the coefficients did not differ significantly. This association did not depend on the IP item about environmental issues. In exploratory comparisons, neither SEE-A nor IP differed by gender, and IP did not vary by year of study; SEE-A differed across year groups, but without a consistent pattern, and this did not survive correction. Because no data were collected on English use, willingness-to-communicate behavior, or teaching outcomes, the results indicate only that the two dispositions share little variance, suggesting that IP is largely distinct from environmental attitudes. The paper offers implications for EFL teacher education as propositions for further longitudinal and intervention studies.

Keywords: International Posture; L2 Motivation; Sustainable Environmental Education; Pre-Service EFL Teachers; Teacher Education.

Publisher's Note:

WISE Pendidikan Indonesia stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Copyright:
©
2026 by the author(s).
License WISE Pendidikan Indonesia, Bandar Lampung, Indonesia.
This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution 4.0 International (CC BY 4.0) license (https://creativecommons.org/licenses/by/4.0/).



INTRODUCTION

International posture (IP) is one of the most commonly used frameworks for explaining why learners of English as a foreign language (EFL) are willing to use a language that is not associated with any specific target community [1], [2]. Studies of IP have focused on the factors that promote it, for example, exposure to English, content-based teaching, studying abroad, and intercultural interaction [3], [4], [5], and on what it predicts, such as willingness to communicate (WTC), the ideal second-language (L2) self, and L2 communication [1], [4], [6]. However, little is known about the relationship between IP and learners' value orientations regarding global issues, even though one IP subscale asks whether learners have ideas about international matters they would like to share with the world [2]. This point matters for training EFL teachers, since future English teachers are expected not only to serve as role models with an international outlook but also, increasingly, to address global issues such as sustainability in their lessons [7], [8], [9].

Sustainability is one of those global issues. Various international frameworks have urged teacher education institutions to make education for sustainable development (ESD) a key part of their programs [7], [10], and English language teaching (ELT) has in recent years been seen as an appropriate context for both intercultural and sustainability education [8], [9]. Nevertheless, researchers have generally examined the environmental and international-motivational aspects of preparing EFL teachers within separate research traditions. The current study does not examine teaching competence, task performance, or classroom practice; instead, it focuses on whether pre-service EFL teachers' attitudes toward sustainable environmental education (SEE-A) relate to the different dimensions of their IP.

The linguistic relevance of this question lies in how prospective English teachers imagine international interlocutors, audiences, and topics of communication, rather than in environmental attitudes alone. A situational account of L2 WTC distinguishes an enduring orientation to interlocutors from the decision to speak in a specific context [11]. Research in intercultural citizenship similarly treats language education as a possible site for engagement with issues that cross national boundaries [12]. In the present dataset, however, these possibilities are conceptual rather than observed communication outcomes.

The empirical gap is therefore precise: prior research connects IP with language motivation and possible communication, and environmental education with sustainability values, but few studies ask whether the two dispositions covary in pre-service EFL teachers. Testing their association can help delimit what the IP construct does—and does not—capture; it cannot demonstrate that environmentally oriented teachers are more willing to speak English.

To address this gap, the present study investigated whether pre-service EFL teachers' SEE-A was associated with each of the four IP dimensions and whether these associations differed in strength (RQ1). To contextualize these relationships, it described the levels of SEE-A and IP in the sample (RQ2) and explored possible differences in both constructs by gender and year of study (RQ3). These group comparisons were exploratory and involved no directional predictions; differences were considered meaningful only when they were at least small in magnitude and their confidence intervals excluded zero.

LITERATURE REVIEW

IP and the Motivation to Communicate in English

In L2 research, scholars have generally understood learners' orientation toward the wider world through Yashima's [1] concept of IP. IP is a motivational and attitudinal disposition: a general stance toward the international community that includes an interest in foreign or international affairs, a readiness to live or work overseas, a willingness to approach rather than avoid people from other cultures, and an open or non-ethnocentric attitude toward different cultures [1], [2]. It is therefore distinct from WTC, which is a readiness to enter into discourse in the L2 at a particular time with a particular person [1]; from actual intercultural contact or L2 use; from L2 proficiency; and from intercultural competence, which refers to the knowledge and skills needed to interact across cultures. IP has been found to predict WTC, communication behavior, and L2 motivation [3], [4], [6], [13], but these outcomes are separate variables, and the present study measured only IP. In environmental and teacher education, by contrast, researchers have mostly examined attitudes toward sustainability in terms of knowledge, gender, program experience, and behavioral intentions [14], [15].

The distinction between IP and communication behavior is also supported by cross-context evidence: learners' willingness to speak depends on situational confidence and affiliation as well as broader motivational dispositions [11]. Research in a Polish educational setting found that the IP–WTC association need not reproduce findings from Japanese EFL contexts [16]. These studies justify treating IP as a language-related orientation, not as an interchangeable indicator of observed speaking behavior.

Yashima [1] proposed the concept of IP to account for the motivation of Japanese EFL learners, since, for them, English is linked less to a particular target society than to the international community in general. In her model, IP predicted learners' WTC in English, both directly and indirectly through its effect on motivation. Subsequent research identified several components of IP, including an intergroup approach–avoidance tendency, interest in international occupations or activities, interest in foreign affairs, and orientation toward intercultural friendship [4]. Yashima [2] then operationalized IP as a 20-item scale comprising four subscales: an intergroup approach–avoidance tendency, interest in international occupations or activities, interest in international news, and having things to communicate to the world (see also [3]). Yashima et al. [4] showed that learners with higher levels of IP were more willing to communicate and, in fact, communicated more frequently in English, even when they were abroad. The four dimensions are not equivalent indicators of readiness to communicate in an L2. The intergroup approach–avoidance tendency concerns willingness to approach rather than avoid people from other cultures and is the dimension most directly related to communication; interest in international vocation or activities reflects future-oriented goals of working or volunteering internationally; interest in international news reflects attention to world affairs; and having things to communicate to the world reflects having opinions on international issues that one would want to express. Environmental attitudes could plausibly relate to each of them through a different route: through concern for distant others (approach–avoidance), through the goal of contributing to global problems in one's future work (vocation), through attention to global events (news), and through having views on global issues (things to communicate). For the last dimension, shared item content is an additional, non-substantive route (see below).

The learning environment and exposure to other cultures appear to influence IP. Yashima and Zenuk-Nishide [5] found that learners who participated in content-based instruction and studied abroad achieved higher IP and showed greater WTC than those in more traditional classes. Kormos and Csizér [13] reported that IP was part of Hungarian learners' motivational profile and that its role varied by age group. More recently, Zhao et al. [6] reported that IP positively predicted Chinese English majors' ideal L2 self and L2 learning experience and indirectly influenced their L2 proficiency. Pastena and Trenchs-Parera [17] examined IP among students at an internationally oriented university in Barcelona, considering gender, language, and students' educational and intercultural backgrounds. Other research also shows that intercultural sensitivity strongly predicts learners' WTC outside the classroom [18]. However, the current sample did not measure any exposure factors (content-based instruction, studying abroad, using English outside class, or having intercultural contact). They are therefore regarded as potential omitted variables that may explain part of the association found here and are not captured by our data.

Recent work has also tested the measurement model of IP, emphasizing that its factor structure deserves empirical scrutiny rather than automatic generalization across samples [19]. A Japanese content-and-language-integrated learning study involving massive open online courses (MOOCs) examined IP together with L2 WTC, but its instructional and digital setting is not part of the present survey [20]. Similarly, virtual intercultural experiences have been examined as correlates of WTC in digital as well as face-to-face settings [21]. Such studies indicate promising directions for future work, not mechanisms measured in this dataset.

In Türkiye, research on IP has grown in recent years. In her doctoral thesis, later published as a book, Demir [3] examined IP among 602 undergraduate students studying ELT, English language and literature, and translation and interpreting at ten state and private universities in Türkiye. The study showed that exposure to English was the main factor boosting motivation and, consequently, IP, while WTC, international contact, travel orientation, the social environment, and intended learning effort were significantly related to IP. Yet participants mostly focused on local issues and needed more enthusiasm and involvement in international connections. As Demir [22] pointed out, pre-service primary school teachers in Türkiye had a low level of IP (the mean was 2.25 on a five-point scale); the interviews revealed that their motivation was aimed at fulfilling academic requirements, that they had limited intercultural exposure, and that they experienced communication anxiety. Dağtaş and Zaimoğlu [23] discovered that uncertainty management and social-emotional competencies together explained 48.3% of the variation in IP among preparatory school students at a Turkish university, and that girls scored higher than boys. Overall, these studies indicate that IP is closely connected to language exposure, intercultural contact, and experience. The present study differs from these earlier Turkish studies in three ways. First, its sample consists of a single ELT program across all four years, rather than the multi-program, multi-university sample of English majors in Demir [3] or the primary education sample in Demir [22]. Second, it uses the English version of the 20-item scale, as in [3], so its IP scores are generally comparable to those in [3] but not to the Turkish version used in [22]. Third, and most importantly, previous studies explained IP in terms of language exposure, contact, motivational, and socio-emotional variables, and none examined whether IP is associated with value orientations toward global issues such as sustainability. This study addresses that question.

Sustainability Attitudes and Environmental Education in EFL Teacher Preparation

Environmental education has slowly developed to include ESD, an approach that considers environmental, social, and economic factors [10]. With this wider perspective, sustainable environmental education seeks not only to provide knowledge about ecological problems but also to foster the values, attitudes, and sense of responsibility that lead to action; attitudes are therefore a key outcome. In Türkiye, Yıldız [24] developed the Sustainable Environment Attitude Scale to measure such attitudes among teachers and pre-service teachers. In this study, this scale assesses SEE-A as the evaluative element: positive or negative judgments about and concern regarding environmental and resource problems, as well as consumption habits. This construct is narrower than general pro-environmental behavior, environmental knowledge, global citizenship, or willingness to incorporate sustainability into teaching. None of these aspects were measured, and so the conclusions drawn here apply only to the attitude score.

Competence-oriented frameworks for sustainability emphasize systemic, anticipatory, and normative abilities that extend beyond expressing a favorable attitude [25]. Higher-education research likewise distinguishes sustainability-related competencies that can be cultivated through teaching from the mere endorsement of environmental concerns [26]. Accordingly, the SEE-A measure should not be treated as a proxy for the participants' teaching skills or capacity for environmental action.

Studies carried out in the field of higher education indicate that students tend to have a positive attitude towards sustainability, even though their views are not always reflected in their actions: Kagawa [27] discovered that a favorable opinion could exist alongside a reluctance to alter one's own way of life, and Cotton et al. [28] noted that sustainability is generally incorporated into higher education in a gradual manner rather than through radical changes. This distinction between attitude and behavior is also relevant to L2 research, where IP is a disposition that can predict actual L2 communication but is not the same as it [4]. Because both constructs are dispositions, a correlation between them provides no direct information about behavior.

Studies involving pre-service teachers show that targeted instruction can change sustainability attitudes. Tomas et al. [15] reported improvements in self-efficacy, knowledge of sustainability issues, and interest in these issues after a dedicated education-for-sustainability unit, and Khazen et al. [29] reported increases in environmental attitudes and willingness to act after a six-week program including inquiry-based learning, outdoor observation, and micro-teaching. These intervention findings come from other contexts and designs. For a cross-sectional sample such as ours, they suggest that program experience may explain differences between year groups, but differences in cohort composition and self-selection are equally plausible alternative explanations that the present design cannot separate.

The attitude–action distinction is also salient in research on environmental engagement: hope, coping, and other motivational resources can matter for whether environmental concern translates into action [30]. These mechanisms were not operationalized here, and no account of environmental behavior is inferred from SEE-A scores.

Researchers have also examined gender in great detail. Across countries and age groups, women tend to have more positive environmental attitudes and concerns than men [31]. A comprehensive review found a gender gap, though it is clearer in behavior than in attitudes [14]. Yet this pattern is not consistent. For example, Drake et al. [32] found no gender differences in environmental literacy among university students, even though women showed greater concern and

felt more empowered to make a difference through everyday actions. These conflicting results suggest that gender differences may depend on which aspect of environmental orientation is measured. Because gender differences in environmental attitudes are well documented, whereas findings for IP are mixed [3], [23], the present study examines gender only as an exploratory comparison to describe the sample, not as a theory-testing question.

A growing body of research shows that English-language classrooms can contribute significantly to sustainability education. A systematic review of studies carried out between 2013 and 2023 revealed that interdisciplinary curricula, project-based activities, teacher training, and alternative methods of assessment are able to enhance both students' language skills and their awareness of environmental issues, although the absence of appropriate materials and the poor correspondence with language learning objectives still constitute problems [9]. In a survey of 345 stakeholders in English language teacher education conducted in Europe, Barros del Río and Mediavilla-Martínez [33] found that people generally hold positive views on eco-social issues, but these views are mainly based on personal interest rather than institutional requirements. In this literature, evidence that environmental content can be taught through English is stronger than evidence that it improves English communication or L2 motivation; the review itself identified weak alignment with language-learning objectives as a recurring problem [9]. We keep this distinction throughout the paper.

In Türkiye, Arslan and Curle [34] examined how the English language curriculum presents the United Nations Sustainable Development Goals (SDGs) to high school students. Their subsequent interview study revealed that qualified EFL teachers view sustainability as a lifelong process relevant to all educational levels, although they also identified a narrow curriculum, limited contact time, and low parental awareness as obstacles [8]. Regarding pre-service teachers, Yılmaz Fındık et al. [35] found that of the 133 pre-service EFL teachers in their research, the majority had never received training in sustainable development, generally linked it to economic growth, and did not see a connection between it and ELT; yet the participants clearly expressed a strong desire for a sustainability course specific to ELT. Intervention studies are promising. For example, Arikan and Zorba [36] demonstrated that a short program using literary texts increased pre-service EFL teachers' understanding of the SDGs, their attitudes toward them, and their confidence in relating the SDGs to language teaching.

Global Issues, Intercultural Citizenship, and the Construct Boundary

The relationship between attitudes toward sustainability and IP can be viewed through the concept of global citizenship. Reysen and Katzarska-Miller [37] proposed that global awareness and a supportive normative environment foster a sense of global citizenship, which in turn predicts prosocial values such as intergroup empathy, valuing diversity, social justice, environmental sustainability, and responsibility to act. Morais and Ogden [38] defined global citizenship as encompassing social responsibility, global competence, and civic engagement. Development education scholars argue that global learning should connect knowledge of global issues with social justice values and a commitment to action [39]. This study did not directly measure global citizenship; it uses it as an interpretive framework to suggest why the two dispositions may covary. Its potential role as a shared orientation or mediator remains speculative and would require direct measurement.

Intercultural citizenship scholarship connects critical engagement with issues beyond one's immediate community to the purposes of foreign-language learning, while recognizing that citizenship-related reflection is not equivalent to linguistic performance [12], [40]. A critical global citizenship perspective further cautions against treating awareness, endorsement, and meaningful action as the same outcome [41]. Together these perspectives help motivate, but do not establish, a possible association between environmental values and international orientation.

Environmental responsibility and openness to the international community may share a common foundation, as both require looking beyond one's immediate group and recognizing interdependence [37], [38]. UNESCO [7] also identifies environmental awareness and intercultural sensitivity as related elements of ESD and global citizenship. However, the two measures used in this study partially overlap in content. For example, the International Posture Scale (IPS) includes an item on international issues such as environmental and north–south issues [2], [3], while the attitude scale addresses global environmental problems like climate change and resource depletion. This overlap could inflate correlations due to shared content rather than a substantive relationship. Therefore, we examine whether associations are limited to the subscale containing the overlapping item. To date, no study has empirically tested the relationship between these two dispositions among pre-service EFL teachers.

Existing research suggests why these two orientations might be related but does not test the relationship. Studies of IP explain its variance mainly through language exposure, intercultural contact, and motivational or socio-emotional variables [3], [6], [23]; studies of global citizenship link global awareness to prosocial values, including environmental sustainability, but do not address L2 motivation [37], [38]; and studies of sustainability in ELT describe teachers' and pre-service teachers' views of ESD [8], [33], [35] without considering their orientation toward the international community. None of these lines of research shows whether IP is part of a broader orientation toward global issues that also includes environmental attitudes, or whether it is a more specifically communicative disposition. The theoretical interest of the present study lies in this distinction rather than in its setting: if environmental attitudes are associated mainly with the communicative dimensions of IP, this would suggest that concern with global issues is linked to L2-related motivation; if they are associated to a similar degree with all dimensions, a general global orientation shared by both measures is the more parsimonious explanation. Turkish pre-service EFL teachers are an informative group for this question because previous studies describe their international contact as limited [3], [22] and their view of sustainability as narrow [35].

Taken together, pre-service EFL teachers appear open to sustainability education, but their preparation in this area is inconsistent, and it is unclear how their sustainability attitudes relate to IP, which is central to L2 motivation. Two competing expectations can be stated. If sustainability attitudes and IP both reflect a general concern with global issues, SEE-A should correlate positively and to a similar degree with all IP dimensions. If, instead, sustainability attitudes are linked specifically to an outward, communicative orientation, the correlations should be clearly stronger for the dimensions that involve engaging with people and audiences abroad (intergroup approach–avoidance tendency and having things to communicate to the world) than for interest in international news. Neither pattern would show that sustainability dispositions promote L2 communication; that question requires behavioral and contextual data not included in this study. Therefore, we use them as a theoretically motivated framework for interpretation, not as pre-registered hypotheses.

METHODS

Research Design

A correlational survey design was used as a quantitative approach because it describes the presence, direction, and strength of relationships between two or more variables without changing them [42], [43]. The variables examined were SEE-A and IP, the latter comprising four dimensions. Since the design is correlational, the relationships shown here are not to be taken as causal. Both instruments were administered once, in a single session and in one questionnaire, during the autumn term of the 2025–2026 academic year, before mid-November 2025. Because all variables were measured at the same time with self-report scales, the design cannot establish the direction of any association: attitudes toward sustainability could influence IP, IP could influence these attitudes, or both could reflect a third variable such as exposure to English or general openness. Common-method variance may also inflate the correlations [44]. Accordingly, we report and interpret the results as associations only.

Participants

The study group consisted of 172 undergraduate students enrolled in the ELT program at the Faculty of Education of Yozgat Bozok University during the autumn term of the 2025–2026 academic year. Of the 242 students enrolled in the program in that term, 172 completed the questionnaire (71.1%). The participants were selected through convenience sampling: students in all four-year groups were invited to take part in class, and those who agreed completed a printed form. All 172 students who completed the questionnaire were included in the analysis; there were no missing item responses. Table 1 presents the participants' demographic characteristics. Because the sample was a convenience sample from a single program, it is not assumed to be representative of pre-service EFL teachers in Türkiye; the year groups were of similar size (Table 1).

Table 1. Demographic Characteristics of the Participants

Variable	Category	f	%
Gender	Female	104	60.5
	Male	68	39.5
Year of study	First year	41	23.8
	Second year	46	26.7
	Third year	39	22.7
	Fourth year	46	26.7
Age	18–20	67	38.9
	21–23	79	45.9
	24–25	26	15.2
Total		172	100.0

Table 1 shows that 60.5% of participants were female and 39.5% were male. The distribution across the four-year groups was relatively even, with each group representing between 22.7% and 26.7% of the sample. Most participants were aged 18 to 23.

Data Collection Instruments

SEE-A was measured with the 27-item Sustainable Environment Attitude Scale, which Yıldız [24] developed with 213 teachers and pre-service teachers; it has three factors (environment is important, use of environmental resources, and consumption habits) and a Cronbach's alpha of .89 [24]. The complete scale was administered in its original Turkish version. Sixteen items are positively worded (for example, "The idea that nature cannot renew the resources we consume so quickly worries me"), and eleven are negatively worded (items 7–10, 13, 16, 17, 20, and 22–24; for example, "Soil loss in other parts of the world does not concern me"). Responses were scored from 1 (strongly disagree) to 5 (strongly agree); negatively worded items were reverse-coded (6 − raw score), and the SEE-A score is the mean of the 27 items, with higher scores indicating more favorable attitudes. Because the items concern environmental concern, resource use, and consumption habits, the scale measures attitudes toward environmental sustainability, not knowledge of sustainability or readiness to teach it. The factor structure was not re-established in this sample, so the total score was used. In this study, Cronbach's alpha was .93; four negatively worded items (20, 22, 23, and 24) had corrected item–total correlations below .20, and a sensitivity analysis without them is reported.

IP was measured with the IPS developed by Yashima [1] and revised by Yashima [2]. It includes 20 items divided among four subscales: intergroup approach–avoidance tendency (six items), interest in an international vocation or activities (six items), interest in international news (four items), and having things to communicate to the world (four items). Items were rated on a five-point scale coded 1 = strongly disagree, 2 = disagree, 3 = no idea, 4 = agree, and 5 = strongly agree. Examples include "I'm interested in an international career" and "I have ideas about international issues, such as environmental issues and north-south issues"; the latter belongs to the having-things-to-communicate subscale. Seven negatively worded items (for instance, "I try to avoid talking with foreigners if I can") were reverse-coded (6 − raw score), so that higher scores indicate a stronger IP. Subscale scores were calculated as the mean of their items. Because the research questions concern the four dimensions, we analyzed subscale scores; for completeness, we also report their correlation with the total IP score (the mean of the four subscale scores). Following Demir [3], we adapted the first item to the local context ("I want to make friends with international students studying in Turkey"). In Türkiye, researchers administered the English version of the scale to 602 undergraduate English majors in ELT, English language and literature, and translation and interpreting programs; the total scale had a Cronbach's alpha of .81, and the subscales ranged from .71 to .75 [3]. A Turkish version, created through translation and back-translation, has also been used with pre-service primary school teachers [22]. Because the current study participants were ELT students who study in English, we administered the English version used in [3] without further wording changes. In this study, Cronbach's alpha for the total scale was .91, and for the subscales it ranged from .82 to .84 (specifically .82 for the intergroup approach–avoidance tendency, .82 for interest in an international vocation or activities, .82 for interest in international news, and .84 for having things to communicate to the world); corrected item–total correlations for the 20 items ranged from .32 to .71. Cronbach's alpha indicates internal consistency only. We adopted the IPS's four-factor structure from previous validation work [2], [3] and did not re-establish it in this sample.

Data Collection Procedure and Ethics

The Yozgat Bozok University Social and Human Sciences Ethics Committee had already approved the study (decision no. 24/65, dated 16 April 2025). In the autumn term of the 2025–2026 academic year, the data were gathered face to face, using printed forms handed out in class. The ethics application also permitted an online form, but no data were collected online. Participants were informed of the study's aim, that participation was voluntary and they could leave at any time, and that their answers would remain confidential and be used solely for research purposes. Completing the questionnaire took about 10 to 12 minutes. The approval covers the present study, including its instruments and data collection procedure. Participants gave their consent after reading the information provided on the first page of the printed form. No names or student numbers were collected, and participation did not affect course grades. To reduce possible pressure arising from the instructor–student relationship, the questionnaires were administered by the first author, an undergraduate student, rather than by course instructors.

Data Analysis

The data were analyzed using SPSS 27.0; Holm-adjusted p values and Steiger's z tests were calculated manually in a spreadsheet. Scale and subscale scores were calculated as item means; there were no missing responses. The SEE-A score was negatively skewed (skewness = −1.76, kurtosis = 2.44), whereas the IP scores were approximately symmetric (Table 2); Spearman correlations, Welch's tests, and Mann–Whitney and Kruskal–Wallis tests were therefore run as robustness checks. The primary analysis (RQ1) consisted of Pearson correlations between SEE-A and the four IP dimensions with 95% confidence intervals; Holm's correction was applied to these four correlations, and differences between them were tested with Steiger's z test. A 23-item SEE-A score without the four weakly discriminating items served as a sensitivity check. For RQ2, we calculated means, standard deviations, and 95% confidence intervals; the conventional five-point interval bands were used only to describe where a mean lies on the response scale. RQ3 was exploratory: gender differences were examined with independent-samples t tests, and year-of-study differences with one-way analysis of variance (ANOVA) followed by Games–Howell comparisons, because variances were unequal for SEE-A (Levene's $p = .019$). Effect sizes (Cohen's d and η^2) are reported with 95% confidence intervals, and Holm's correction was applied within each family of five tests. We used a two-tailed significance level of .05, and we do not interpret nonsignificant results as evidence of equivalence. With $N = 172$, the study had approximately 75% power to detect a correlation of .20.

To examine whether item-content overlap could account for the associations, we used the IPS structure. The only IPS item that refers to environmental issues belongs to the having-things-to-communicate subscale; the other three subscales (intergroup approach–avoidance tendency, interest in international vocation or activities, and interest in international news) contain no environmental content. If the associations were produced by overlapping content, SEE-A should correlate clearly more strongly with the having-things-to-communicate subscale than with the other three. We therefore compared the size of these dependent correlations with Steiger's z test. In addition, we recomputed the having-things-to-communicate score four times, each time omitting one of its four items (items 17–20 of the IPS; item 19 is the environmental item), and correlated each three-item score with SEE-A; if the association depended on the environmental item, it should drop clearly when item 19 was omitted.

RESULTS AND DISCUSSION

Results

Pre-Service EFL Teachers' Levels of SEE-A and IP

The descriptive statistics for the SEE-A and the IP dimensions are given in Table 2.

Table 2. Descriptive Statistics for SEE-A and IP Dimensions

Scale / Dimension	M	SD	95% CI	α	Skew.	Kurt.
SEE-A	3.95	0.77	[3.83, 4.06]	.93	−1.76	2.44
Intergroup approach–avoidance tendency	3.49	1.06	[3.33, 3.65]	.82	−0.52	−0.53
Interest in international vocation or activities	3.39	1.05	[3.24, 3.55]	.82	−0.13	−1.07
Interest in international news	3.75	0.98	[3.60, 3.89]	.82	−0.33	−0.98
Having things to communicate to the world	3.59	0.94	[3.45, 3.73]	.84	−0.33	−0.77
IP (total)	3.56	0.81	[3.43, 3.68]	.91	−0.06	−1.19

Table 2 shows that the mean SEE-A score was 3.95 (SD = 0.77, 95% CI [3.83, 4.06]). On the five-point response scale, this mean lies just below "agree" (4); that is, participants on average evaluated environmental sustainability favorably, and the negatively skewed distribution shows that most responses were concentrated at the favorable end of the scale. In terms of the conventional interval bands, it falls in the 'high' band, but this label is only descriptive. The IP dimension means ranged from 3.39 for interest in international vocation or activities (95% CI [3.24, 3.55]) to 3.75 for interest in international news (95% CI [3.60, 3.89]). Because the sample was a convenience sample from a single program, these values describe only this group.

Figure 1 visualizes the reported sample means with their original 95% confidence intervals; this is a descriptive display, not an additional inferential comparison.

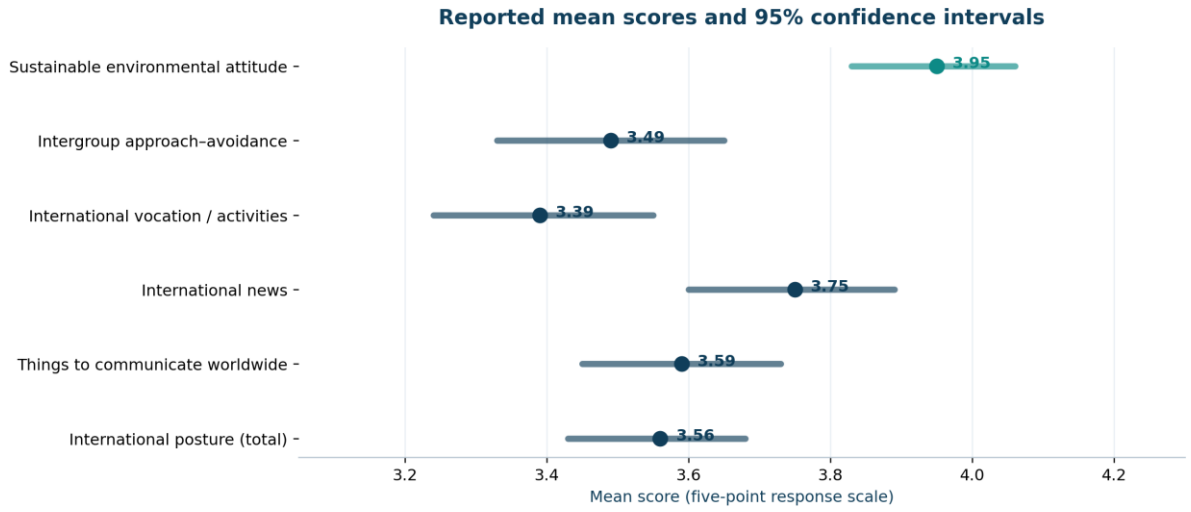


Figure 1. Reported mean scores and 95% confidence intervals for SEE-A and IP dimensions (N = 172).

Relationships Between SEE-A and IP

Table 3 presents the Pearson correlation coefficients between SEE-A and the IP dimensions.

Table 3. Pearson Correlations Between SEE-A and IP Dimensions

Variable	1	2	3	4	5
1. SEE-A (Total)	—				
2. Intergroup approach–avoidance tendency	.17*	—			
3. Interest in intl. vocation or activities	.18*	.57***	—		
4. Interest in international news	.15*	.54***	.55***	—	
5. Having things to communicate to the world	.21**	.40***	.53***	.64***	—

Table 3 shows that SEE-A correlated positively but weakly with all four IP dimensions: intergroup approach–avoidance tendency, r(170) = .17, 95% CI [.02, .31], p = .026; interest in international vocation or activities, r(170) = .18, 95% CI [.03, .32], p = .018; interest in international news, r(170) = .15, 95% CI [.00, .29], p = .049; and having things to communicate to the world, r(170) = .21, 95% CI [.06, .35], p = .006. After Holm's correction, only the correlation with having things to communicate to the world remained significant (adjusted p = .023); the other three were not significant (adjusted p = .055 for each). According to Cohen's [45] benchmarks, all four are

small associations, corresponding to 2%–4% shared variance, and the lower limits of three of the confidence intervals were close to zero. Steiger's z tests showed that the four coefficients did not differ significantly from one another ($z = -0.94$ to 0.41, all $p > .34$). Spearman correlations ($\rho = .13$ to .29) and a 23-item SEE-A score without the four weakly discriminating items ($\alpha = .95$; $r = .14$ to .20) gave the same pattern, with having things to communicate to the world again showing the strongest association (Supplementary File S1). The IP dimensions were positively and moderately to strongly correlated with one another ($r = .40$ to .64, $p < .001$), indicating that they represent related aspects of a common orientation.

Figure 2 displays the four reported Pearson correlations and their 95% confidence intervals. Only the association with having things to communicate to the world remained statistically significant after Holm correction; overlapping confidence intervals alone are not tests of coefficient differences.

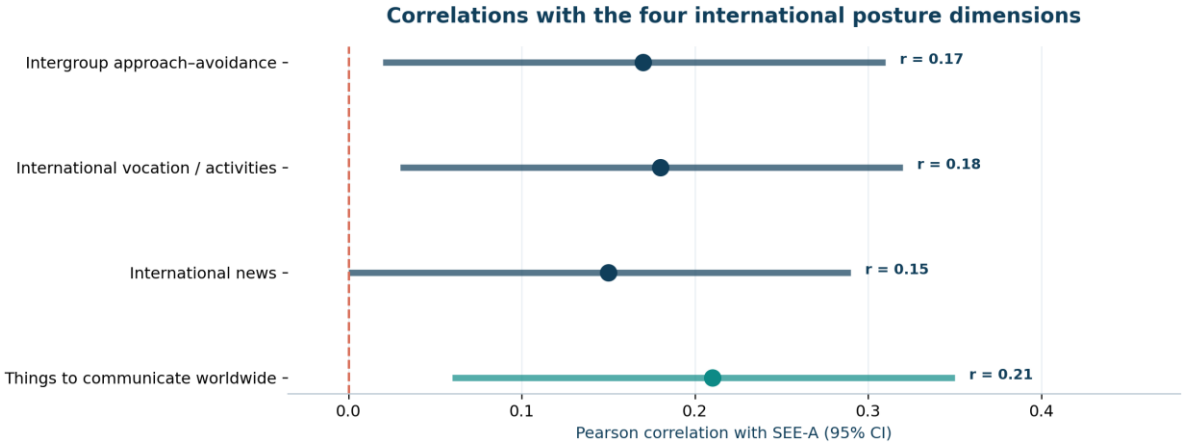


Figure 2. Pearson correlations of SEE-A with four IP dimensions (N = 172); horizontal ranges are reported 95% confidence intervals.

Item-overlap check. The association with the having-things-to-communicate subscale, which contains the only IPS item referring to environmental issues ($r = .21$), was numerically the largest but was not significantly stronger than the associations with the three subscales that contain no environmental content ($r = .15$ to .18; Steiger's z tests, all $p > .34$). When each of the four items of this subscale was omitted in turn, the correlation between SEE-A and the remaining three-item score ranged from .18 to .24 (all $p < .02$). Without the environmental item (item 19), the correlation was unchanged, $r(170) = .21$, 95% CI [.06, .34], $p = .007$ ($\alpha = .77$ for the three remaining items), and item 19 itself correlated .18 with SEE-A; the association therefore did not depend on the environmental item. Because the three content-free subscales showed similar associations, the overall pattern cannot be attributed to the overlapping item, although with associations this small the check has limited power to detect differences between coefficients.

Exploratory Comparisons by Gender

Table 4 presents the results of the t-tests conducted on female and male pre-service teachers.

Table 4. Independent-Samples t-Test Results by Gender

Scale / Dimension	Female M (SD)	Male M (SD)	t(170)	p	d [95% CI]
SEE-A (Total)	3.93 (0.75)	3.97 (0.79)	−0.31	.760	−0.05 [−0.35, 0.26]
Intergroup approach–avoidance tendency	3.41 (1.01)	3.62 (1.12)	−1.29	.200	−0.20 [−0.51, 0.11]
Interest in intl. vocation or activities	3.29 (1.04)	3.56 (1.04)	−1.65	.100	−0.26 [−0.56, 0.05]
Interest in international news	3.65 (0.97)	3.90 (0.98)	−1.68	.095	−0.26 [−0.57, 0.04]
Having things to communicate to the world	3.51 (0.91)	3.72 (0.97)	−1.42	.157	−0.22 [−0.53, 0.08]

In the exploratory comparisons by gender (Table 4), female (M = 3.93, SD = 0.75) and male participants (M = 3.97, SD = 0.79) did not differ significantly in their SEE-A, mean difference = −0.04, 95% CI [−0.27, 0.20], t(170) = −0.31, p = .760, d = −0.05, 95% CI [−0.35, 0.26]; the three SEE-A factors did not differ either (all p > .70). No significant gender differences were found in any IP dimension (all p > .09); male participants scored numerically higher on all four dimensions (d = −0.20 to −0.26), but all confidence intervals included zero. These intervals were too wide (for example, −0.59 to 0.05 for the mean difference in interest in international vocation or activities) to show that female and male participants have equivalent scores. Gender composition did not differ significantly across the year groups, χ^2 (3) = 1.68, p = .641. These results describe this sample only.

Exploratory Comparisons by Year of Study

The results of the one-way ANOVA comparing SEE-A and IP scores across the four year groups are given in Table 5.

Table 5. One-Way ANOVA Results by Year of Study

Scale / Dimension	1st Year M (SD)	2nd Year M (SD)	3rd Year M (SD)	4th Year M (SD)	F(3, 168)	p	η^2	Significant difference
SEE-A (Total)	4.09 (0.62)	3.83 (0.82)	4.17 (0.63)	3.75 (0.88)	3.11	.028*	.05	None (Games–Howell)
Intergroup approach–avoidance	3.65 (0.92)	3.46 (1.01)	3.56 (1.14)	3.33 (1.15)	0.76	.518	.01	–
Interest in intl. vocation	3.37 (1.05)	3.37 (1.12)	3.53 (1.05)	3.32 (1.00)	0.33	.805	.01	–

Scale / Dimension	1st Year M (SD)	2nd Year M (SD)	3rd Year M (SD)	4th Year M (SD)	F(3, 168)	p	η^2	Significant difference
Interest in intl. news	3.68 (0.88)	3.63 (1.03)	3.94 (0.93)	3.77 (1.04)	0.78	.506	.01	–
Having things to communicate	3.52 (0.85)	3.68 (0.86)	3.69 (1.02)	3.48 (1.02)	0.57	.638	.01	–

The exploratory one-way ANOVA (Table 5) indicated a difference in SEE-A across the year groups, $F(3, 168) = 3.11$, $p = .028$, $\eta^2 = .05$, 95% CI [.00, .12]; Welch's ANOVA, $F(3, 93.2) = 3.14$, $p = .029$, and the Kruskal–Wallis test, $H(3) = 9.19$, $p = .027$, gave the same result. The pattern, however, was not monotonic: third-year ($M = 4.17$, $SD = 0.63$) and first-year students ($M = 4.09$, $SD = 0.62$) had the highest means, and fourth-year ($M = 3.75$, $SD = 0.88$) and second-year students ($M = 3.83$, $SD = 0.82$) the lowest. Because the variances were unequal, Games–Howell comparisons were used, and no pairwise difference was significant (largest: third vs. fourth year, mean difference = 0.43, adjusted $p = .054$). The omnibus result did not remain significant after Holm's correction across the five year-of-study tests (adjusted $p = .140$). Because each year group consisted of different students assessed once, any such difference would be a between-cohort difference, not a change over time; gender composition did not differ across the year groups. None of the IP dimensions differed significantly across the year groups (all $p > .50$, all $\eta^2 \leq .01$).

Figure 3 shows the reported SEE-A means by year of study. The cross-sectional differences are descriptive cohort contrasts and should not be interpreted as within-person change over the teacher education program.

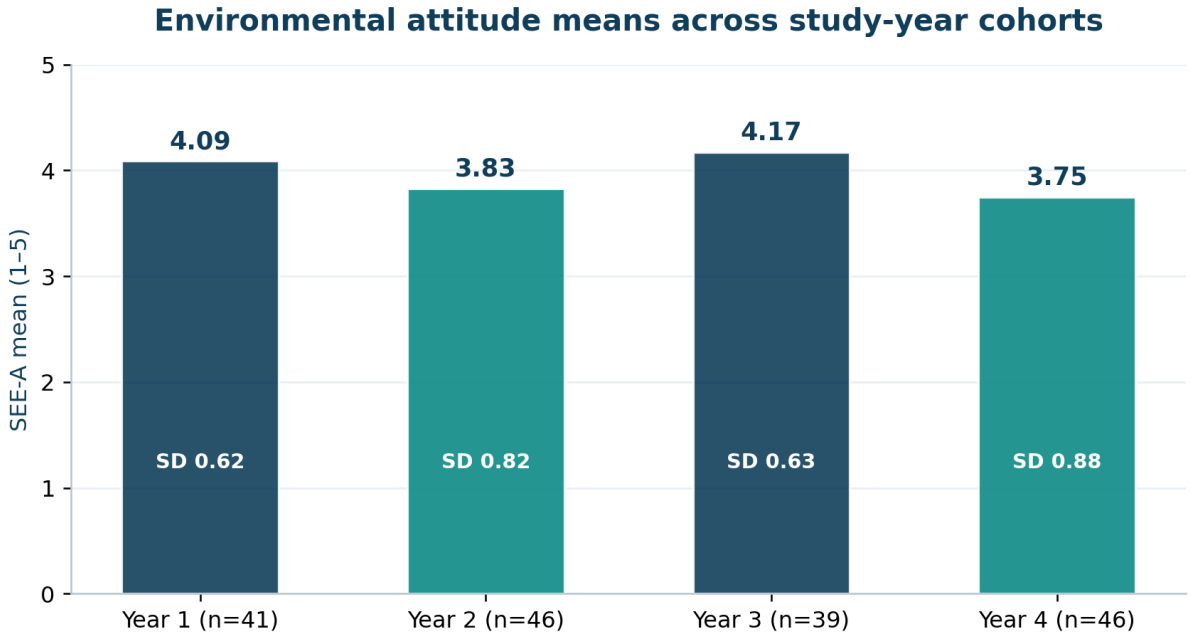


Figure 3. Mean SEE-A scores by year of study; labels show the source-reported group standard deviations (descriptive cohorts, not longitudinal trends)

Discussion

The study examined whether pre-service EFL teachers' SEE-A is associated with the dimensions of their IP. The main result is that these attitudes correlated positively but weakly, and to a similar degree, with all four IP dimensions; only the association with having things to communicate to the world remained significant after correction for multiple tests. This primary finding is discussed first, followed by the descriptive and exploratory results.

Regarding the primary question (RQ1), pre-service teachers with more favorable attitudes toward environmental sustainability tended, to a small extent, to report more ideas that they would like to communicate to the world; the associations with interest in international vocations or activities, the tendency to approach rather than avoid people from other cultures, and interest in international news were of similar size but did not remain significant after correction. The direction of these associations is consistent with the view that environmental responsibility and an international orientation may both be components of a broader global citizenship orientation [37], [38], and with UNESCO's [7] framing of environmental awareness and intercultural sensitivity as related aims of ESD. Their size, however, indicates that any such shared orientation accounts for only a small part of the variance in either disposition (about 2%–4%). Because global citizenship was not measured, this remains an interpretation rather than a demonstrated mechanism.

What do these correlations add to IP research? In Yashima's [1], [4] model, IP matters for L2 learning because it predicts WTC and, through WTC, actual L2 communication. The present results suggest that IP is largely distinct from evaluative orientations toward a global environmental issue: the two dispositions shared at most about 4% of their variance. Two features of the results argue against reading even this small association as evidence of a specifically communicative mechanism. First, the four correlations did not differ significantly in size. The only association that remained significant after correction involved having things to communicate to the world, which is in the direction of the second expectation stated in the Introduction; however, it was not significantly stronger than the association with interest in international news, and the association with the intergroup approach–avoidance tendency was not stronger either, so the data do not discriminate clearly between the two expectations. With associations of this size, the study also had limited power to detect differences between coefficients. Second, the study did not measure WTC and L2 use, so it cannot be said whether the shared variance between the two dispositions affects readiness to communicate in English. Three alternative accounts must also be considered. The first is content overlap: one IPS item refers explicitly to environmental issues, and several SEE-A items refer to global environmental problems; however, the association with the having-things-to-communicate subscale remained of similar size when any one of its items, including the environmental item, was omitted, so the overlapping item does not explain the result. The second is common-method variance, since both scales are self-report Likert measures completed in one session [44]; because common-method variance tends to inflate correlations, the substantive association may be even weaker. The third is omitted variables such as exposure to English, intercultural contact, and general openness, which may underlie both dispositions. Pairwise correlations alone do not establish discriminant validity, which would require a joint measurement model.

Regarding the descriptive question (RQ2), participants on average evaluated environmental sustainability favorably ($M = 3.95$, 95% CI [3.83, 4.06]), and their responses were concentrated at the favorable end of the scale, consistent with previous studies showing that university students and

pre-service teachers generally report positive views of sustainability [15], [27]. This ceiling effect also restricts SEE-A variance and may have attenuated its correlations with IP. Favorable attitude ratings, however, do not show that participants have the knowledge, pedagogical content knowledge, or readiness needed to teach sustainability through English; in Türkiye, Yılmaz Fındık et al. [35] found that pre-service EFL teachers may hold positive attitudes without a clear understanding of sustainable development or of how to incorporate it into language teaching. Intervention research can test whether teacher education can turn such attitudes into practice by measuring both environmental and language-learning outcomes.

Participants' mean scores on the IP dimensions ranged from 3.39 to 3.75, that is, between "no idea" and "agree" on the response scale; interest in international news was rated highest and interest in international vocation or activities lowest. Direct comparisons with earlier Turkish studies, such as the study of pre-service primary school teachers who completed a Turkish version of the scale [22] and Demir's [3] finding that English majors tended to focus on local rather than international matters, are limited by differences in program, instrument version, and sampling. Because the data were self-reported, social desirability may also have inflated the scores.

Regarding the exploratory comparisons (RQ3), female and male participants did not differ significantly in their attitudes toward environmental sustainability ($d = -0.05$, 95% CI [−0.35, 0.26]). This contrasts with studies showing that women tend to report stronger environmental attitudes and concerns [14], [31], but it aligns with evidence that gender differences are inconsistent and may depend on the aspect of environmental orientation being measured [32]. The ceiling tendency of SEE-A scores in this sample, which leaves little room for group differences, is one possible reason; differences in the program's composition are another. Because this was an exploratory comparison in a single convenience sample, the confidence interval cannot exclude small differences in either direction, and the result should not be generalized.

No significant gender difference was found in IP; male participants scored slightly higher on all four dimensions, but not significantly. Earlier findings on gender and IP are mixed: Dağtaş and Zaimoğlu [23] found that female students obtained higher IP scores, whereas Demir's [3] study revealed only a weak association. Possible explanations for the null result, for example, that IP depends more on exposure to English, content-based learning, study abroad, or intercultural experience than on gender [3], [4], [5], [17], could not be tested here because these variables were not measured; they remain untested rival explanations. In addition, the confidence intervals for the gender differences in IP were wide enough to include small differences in either direction, so the result should not be read as evidence that female and male participants have equivalent IP.

The year groups differed in SEE-A in the omnibus test, but the pattern was not monotonic (the third- and first-year groups had the highest means), no pairwise contrast was significant, and the omnibus effect would not remain significant after correction for multiple tests. These results therefore provide no evidence of a systematic difference between earlier and later cohorts. Because different students were assessed once in each year group, any such difference would be a between-cohort difference, not evidence of change over time, and could reflect differences in cohort composition or self-selection into the program.

IP scores did not differ significantly across the year groups. This cross-sectional null result does not show that IP remains unchanged during the program or that progressing through the program does not increase it; it shows only that, in this sample, the four cohorts did not differ detectably at one point in time. The result is nevertheless consistent with Demir's [3] finding that,

among English majors, year of study had only a weak and negative association with IP, whereas having traveled abroad, the number of countries visited, and international contact were associated with higher IP. Pre-service teachers in Türkiye have also described a lack of intercultural experience as a barrier to a more international outlook [22]. Whether structured intercultural opportunities, such as international or virtual exchanges or work with international students, increase IP is a question for longitudinal or intervention research.

From a language-and-communication perspective, the small correlations are more informative as boundaries on interpretation than as a rationale for a new language-learning intervention. The results identify modest covariation between environmental evaluations and the language-related orientation of IP; they do not identify specific communicative acts, intercultural interactions, digital exchanges, or shifts in L2 learning motivation. Research incorporating observed communication outcomes and contextual measures would be needed before drawing such conclusions [11], [16], [20], [21].

CONCLUSION

In a single-program sample of 172 Turkish pre-service EFL teachers, SEE-A covaried positively but weakly with the four dimensions of IP ($r = .15$ to $.21$); only the association with having things to communicate to the world remained significant after correction for multiple tests, and the four coefficients did not differ significantly from one another. The contribution of the study to IP research is therefore mainly a delimiting one: IP shared only a small amount of variance (about 2%–4%) with an evaluative orientation toward a global environmental issue, which suggests that it is largely distinct from such value orientations rather than an expression of a general concern with global problems. Because the study was cross-sectional and correlational, and because it did not measure English use, WTC, proficiency, intercultural contact, or teaching practice, it does not show that integrating sustainability content into EFL teacher education would strengthen IP or English communication. This proposition can be tested next, for example, in a longitudinal or quasi-experimental study in which sustainability-themed communicative tasks, such as comparing climate adaptation projects in different countries or exchanging messages about local environmental issues with learners in another country, are evaluated for their effects on IP, WTC, L2 use, and environmental attitudes.

LIMITATIONS

The study has certain limitations. First, the data came from a convenience sample in a single ELT program at a state university; therefore, the results cannot be generalized widely. Second, because the research uses a cross-sectional, correlational design, it cannot draw causal conclusions or determine directionality, and the differences observed among year groups may reflect cohort differences rather than developmental change. Third, all data were self-reported and collected through two questionnaires completed at the same time, so social desirability and common method bias are possible [44]. Fourth, one IPS item refers to environmental issues, and several SEE-A items refer to global environmental problems. Although the item-overlap check suggests that this does not explain the observed associations, content overlap may contribute to them. Fifth, this sample did not test the structural validity of the two scales. The SEE-A was taken from an unpublished master's thesis [24] in which it was developed with teachers and pre-service teachers; its three-

factor structure was not re-tested here, one of its factors showed low internal consistency (α = .64), four negatively worded items correlated weakly with the total score, and SEE-A scores were negatively skewed, which may have attenuated the correlations. Sixth, several exploratory tests were conducted, and their unadjusted p-values should be interpreted with caution; with N = 172, the study also had only about 75% power to detect a correlation of .20. Finally, factors that may influence IP, such as exposure to English outside the classroom [3], previous international experience, participation in the Erasmus program, or contact with international students, were not considered.

Most importantly for the language-learning interpretation of the findings, the study recorded no language outcomes. The study did not measure actual English use, L2 proficiency, WTC or communication behavior, intercultural contact, digital interaction in English, or the integration of sustainability content into classroom teaching. These omissions are not merely sampling limitations: they mean that the study can speak to the covariation of two dispositions, but not to whether either of them affects L2 communication or teaching.

AUTHOR INFORMATION

Corresponding Author

Ayşe Nesil Demir Yastıbaş – Department of English Language Teaching, Yozgat Bozok University (Türkiye);
orcid.org/0000-0002-2417-916X
Email: nesil.demir@bozok.edu.tr

Authors

Tuğba Özmantar – Department of English Language Teaching, Yozgat Bozok University (Türkiye);
orcid.org/0009-0000-7019-1349

Ayşe Nesil Demir Yastıbaş – Department of English Language Teaching, Yozgat Bozok University (Türkiye);
orcid.org/0000-0002-2417-916X

AUTHOR CONTRIBUTION

T.Ö. investigation and administration of the printed questionnaires; manuscript review and editing. A.N.D.Y. corresponding author; manuscript review and editing. Both authors reviewed and approved the final manuscript and take responsibility for its content.

ACKNOWLEDGMENTS

The Scientific and Technological Research Council of Türkiye (TÜBİTAK) supported this study through the 2209-A University Students Research Projects Support Program (2024/1 call; project no. 1919B012408679). This study was presented as an oral presentation entitled “Sürdürülebilir Çevre Eğitimi Tutumlarının İngilizce Öğretmen Adaylarının Uluslararası Duruşları Üzerindeki Etkisi: Nicel Bir Çalışma” at the 20th International Congress on Research in Education (ICRE 2025), held in Bartın, Türkiye, on 27–29 November 2025. The presentation reported preliminary

results from the same dataset; the analyses reported in this article supersede them. We used the same working title in the ethics application. Although the Turkish title used the word "etkisi" (effect), the analyses were correlational, and the present article reports associations only. Apart from this disclosed conference presentation, the dataset has not been presented or published elsewhere.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

The authors used Grammarly and ChatGPT (OpenAI) during manuscript preparation and editorial revision to support language editing, text organization, and clarification of methodological reporting. These tools did not generate new empirical observations or independently verify participant responses. Both authors reviewed and revised the resulting text and accept responsibility for the accuracy of the data, citations, interpretations, and final manuscript.

REFERENCES

[1] T. Yashima, "Willingness to communicate in a second language: The Japanese EFL context," *The Modern Language Journal*, vol. 86, no. 1, pp. 54–66, 2002, https://doi.org/10.1111/1540-4781.00136

[2] T. Yashima, "International posture and the ideal L2 self in the Japanese EFL context," in Motivation, Language Identity and the L2 Self, Z. Dörnyei and E. Ushioda, Eds. Multilingual Matters, 2009, pp. 144–163, https://doi.org/10.21832/9781847691293-008

[3] A. N. Demir, *International Posture and L2 Motivation in Türkiye: Examining the Interrelationships Among Undergraduate English Majors*, J. İnözü, Ed. Akademisyen Kitabevi, 2025, https://doi.org/10.37609/akya.3631

[4] T. Yashima, L. Zenuk-Nishide, and K. Shimizu, "The influence of attitudes and affect on willingness to communicate and second language communication," *Language Learning*, vol. 54, no. 1, pp. 119–152, 2004, https://doi.org/10.1111/j.1467-9922.2004.00250.x

[5] T. Yashima and L. Zenuk-Nishide, "The impact of learning contexts on proficiency, attitudes, and L2 communication: Creating an imagined international community," *System*, vol. 36, no. 4, pp. 566–585, 2008, https://doi.org/10.1016/j.system.2008.03.006

[6] X. Zhao, W. Xiao, and J. Zhang, "L2 motivational self system, international posture and the sustainable development of L2 proficiency in the COVID-19 era: A case of English majors in China," *Sustainability*, vol. 14, no. 13, Art. no. 8087, 2022, https://doi.org/10.3390/su14138087

[7] UNESCO, *Education for Sustainable Development: A Roadmap*. UNESCO, 2020. Available online: https://www.unesco.org/en/articles/education-sustainable-development-roadmap

[8] S. Arslan and S. Curle, "Institutionalising English as a foreign language teachers for global sustainability: Perceptions of education for sustainable development in Turkey," *International Journal of Educational Research*, vol. 125, Art. no. 102353, 2024, https://doi.org/10.1016/j.ijer.2024.102353

[9] B. Yu, W. Y. Guo, and H. Fu, "Sustainability in English language teaching: Strategies for empowering students to achieve the sustainable development goals," *Sustainability*, vol. 16, no. 8, Art. no. 3325, 2024, https://doi.org/10.3390/su16083325

[10] UNESCO, *Education for Sustainable Development Goals: Learning Objectives*. UNESCO,

2017. Available online: https://www.unesco.org/en/articles/education-sustainable-development-goals-learning-objectives
[11] P. D. MacIntyre, R. Clément, Z. Dörnyei, and K. A. Noels, "Conceptualizing willingness to communicate in a L2: A situational model of L2 confidence and affiliation," *The Modern Language Journal*, vol. 82, no. 4, pp. 545–562, 1998, https://doi.org/10.1111/j.1540-4781.1998.tb05543.x
[12] M. Byram, *From Foreign Language Education to Education for Intercultural Citizenship: Essays and Reflections*. Multilingual Matters, 2008, https://doi.org/10.21832/9781847690807
[13] J. Kormos and K. Csizér, "Age-related differences in the motivation of learning English as a foreign language: Attitudes, selves, and motivated learning behavior," *Language Learning*, vol. 58, no. 2, pp. 327–355, 2008, https://doi.org/10.1111/j.1467-9922.2008.00443.x
[14] R. Gifford and A. Nilsson, "Personal and social factors that influence pro-environmental concern and behaviour: A review," *International Journal of Psychology*, vol. 49, no. 3, pp. 141–157, 2014, https://doi.org/10.1002/ijop.12034
[15] L. Tomas, S. Girgenti, and C. Jackson, "Pre-service teachers' attitudes toward education for sustainability and its relevance to their learning: Implications for pedagogical practice," *Environmental Education Research*, vol. 23, no. 3, pp. 324–347, 2017, https://doi.org/10.1080/13504622.2015.1109065
[16] A. Mystkowska-Wiertelak and A. Pietrzykowska, "L2 willingness to communicate (WTC) and international posture in the Polish educational context," *Studies in Second Language Learning and Teaching*, vol. 1, no. 1, pp. 119–134, 2011, https://doi.org/10.14746/ssllt.2011.1.1.7
[17] A. Pastena and M. Trenchs-Parera, "Measuring international posture at an internationalised university in Barcelona: An exploration of gender, language, and educational and intercultural trajectories," *International Journal of Multilingualism*, vol. 22, no. 4, pp. 2215–2233, 2025, https://doi.org/10.1080/14790718.2024.2434646
[18] E. Barrios and M. Napiórkowska, "Affective factors, intercultural sensitivity, and willingness to communicate orally outside class: A study with EFL secondary school learners in Poland and Spain," *Language Teaching Research*, vol. 30, no. 7, pp. 3928–3950, 2026, https://doi.org/10.1177/13621688241234225
[19] M. Toyama and Y. Yamazaki, "Examining the measurement model of international posture and how it relates to personality traits," *SAGE Open*, vol. 10, no. 4, 2020, https://doi.org/10.1177/2158244020969673
[20] K. Yamaoka, "Influence of CLIL with MOOCs on Japanese EFL students' L2 willingness to communicate and international posture," *TESOL Journal*, vol. 15, no. 4, Art. no. e840, 2024, https://doi.org/10.1002/tesj.840
[21] J. S. Lee and K. Lee, "Affective factors, virtual intercultural experiences, and L2 willingness to communicate in in-class, out-of-class, and digital settings," *Language Teaching Research*, vol. 24, no. 6, pp. 813–833, 2020, https://doi.org/10.1177/1362168819831408
[22] A. N. Demir, "Trapped in a domestic posture? Exploring the international posture of pre-service primary school teachers in Türkiye," *Intercultural Communication Education*, vol. 8, no. 1, Art. no. 102940, 2025, https://doi.org/10.29140/ice.v8n1.102940
[23] A. Dağtaş and S. Zaimoğlu, "The predictors of EFL students' international posture at a university context," *Batı Anadolu Eğitim Bilimleri Dergisi*, vol. 15, no. 2, pp. 1570–1589, 2024, https://doi.org/10.51460/baebd.1421288
[24] Ş. Yıldız, "Öğretmenlerin, öğretmen adaylarının ve öğrencilerin sürdürülebilir çevre ile ilgili kavramsal anlamaları ve tutumları [Teachers', pre-service teachers', and students' conceptual understanding of and attitudes toward the sustainable environment]," M.S. thesis, Institute of Educational Sciences, Dokuz Eylül University, İzmir, Türkiye, 2011. Available online: https://tezara.org/theses/286523

[25] A. Wiek, L. Withycombe, and C. L. Redman, "Key competencies in sustainability: A reference framework for academic program development," *Sustainability Science*, vol. 6, pp. 203–218, 2011, https://doi.org/10.1007/s11625-011-0132-6
[26] M. Rieckmann, "Future-oriented higher education: Which key competencies should be fostered through university teaching and learning?" Futures, vol. 44, no. 2, pp. 127–135, 2012, https://doi.org/10.1016/j.futures.2011.09.005
[27] F. Kagawa, "Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change," *International Journal of Sustainability in Higher Education*, vol. 8, no. 3, pp. 317–338, 2007, https://doi.org/10.1108/14676370710817174
[28] D. Cotton, I. Bailey, M. Warren, and S. Bissell, "Revolutions and second-best solutions: Education for sustainable development in higher education," *Studies in Higher Education*, vol. 34, no. 7, pp. 719–733, 2009, https://doi.org/10.1080/03075070802641552
[29] M. Khazen, S. Asli, A. Basheer, and M. Hugerat, "The impact of a sustainability education initiative on pre-service teachers: Changes in environmental attitudes, willingness to act, and ecological footprint," *Sustainability*, vol. 17, no. 12, Art. no. 5621, 2025, https://doi.org/10.3390/su17125621
[30] M. Ojala, "Hope and climate change: The importance of hope for environmental engagement among young people," *Environmental Education Research*, vol. 18, no. 5, pp. 625–642, 2012, https://doi.org/10.1080/13504622.2011.637157
[31] L. C. Zelezny, P.-P. Chua, and C. Aldrich, "Elaborating on gender differences in environmentalism," *Journal of Social Issues*, vol. 56, no. 3, pp. 443–457, 2000, https://doi.org/10.1111/0022-4537.00177
[32] K. C. Drake, J. H. Speer, M. L. Stachewicz, T. M. K. Newsham, and V. L. Sheets, "Environmental literacy differences based on gender identity and race: A social justice concern," *Sustainability*, vol. 16, no. 1, Art. no. 282, 2024, https://doi.org/10.3390/su16010282
[33] M. A. Barros del Río and B. Mediavilla-Martínez, "English language teacher education with an eco-social perspective: An exploratory study," *TESOL Quarterly*, 2025, https://doi.org/10.1002/tesq.3372
[34] S. Arslan and S. Curle, "Sustainable development goals in the English language high school curriculum in Turkey," *European Journal of Education*, vol. 56, no. 4, pp. 681–695, 2021, https://doi.org/10.1111/ejed.12473
[35] L. Yılmaz Fındık, İ. Bayram, and Ö. Canaran, "Pre-service English language teachers' conceptions of sustainable development: A case from Turkish higher education context," *International Journal of Sustainability in Higher Education*, vol. 22, no. 2, pp. 423–456, 2021, https://doi.org/10.1108/IJSHE-06-2020-0202
[36] A. Arikan and M. G. Zorba, "Raising pre-service English language teachers' awareness of sustainable development goals through literary texts," *International Journal of Sustainability in Higher Education*, vol. 25, no. 8, pp. 1681–1695, 2024, https://doi.org/10.1108/IJSHE-06-2023-0256
[37] S. Reysen and I. Katzarska-Miller, "A model of global citizenship: Antecedents and outcomes," *International Journal of Psychology*, vol. 48, no. 5, pp. 858–870, 2013, https://doi.org/10.1080/00207594.2012.701749
[38] D. B. Morais and A. C. Ogden, "Initial development and validation of the global citizenship scale," *Journal of Studies in International Education*, vol. 15, no. 5, pp. 445–466, 2011, https://doi.org/10.1177/1028315310375308
[39] D. Bourn, *The Theory and Practice of Development Education: A Pedagogy for Global Social Justice*. Routledge, 2015, https://doi.org/10.4324/9781315752730
[40] M. Porto, S. A. Houghton, and M. Byram, "Intercultural citizenship in the (foreign) language classroom," *Language Teaching Research*, 2018, https://doi.org/10.1177/1362168817718580

[41] V. O. de Andreotti, “Soft versus critical global citizenship education,” in Development Education in Policy and Practice, S. McCloskey, Ed. Palgrave Macmillan, 2014, pp. 21–31, https://doi.org/10.1057/9781137324665_2
[42] Ş. Büyüköztürk, *Sosyal Bilimler için Veri Analizi El Kitabı* [Data Analysis Handbook for Social Sciences]. Pegem Akademi, 2011. Available online: https://depo.pegem.net/9789756802748.pdf
[43] N. Karasar, *Bilimsel Araştırma Yöntemi* [Scientific Research Method]. Nobel Yayın Dağıtım, 2009. Available online: https://katalog.bilecik.edu.tr/bib/24416
[44] P. M. Podsakoff, S. B. MacKenzie, J.-Y. Lee, and N. P. Podsakoff, “Common method biases in behavioral research: A critical review of the literature and recommended remedies,” *Journal of Applied Psychology*, vol. 88, no. 5, pp. 879–903, 2003, https://doi.org/10.1037/0021-9010.88.5.879
[45] J. Cohen, *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. Lawrence Erlbaum Associates, 1988, https://doi.org/10.4324/9780203771587