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Research Article

Exploring EAP Students' Conceptualization of Sustainable Development Goals: Implications for Higher Education

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Abstract: The United Nations' (UN) Sustainable Development Goals (SDGs) aim to create a sustainable world and provide permanent solutions to major social, ecological, and economic problems affecting the world. Education holds a central position in disseminating and achieving these goals with a thorough understanding. From this stance, English language teaching (ELT) lends itself to giving leeway to integrating SDGs considering students' academic purposes. With all these in mind, this study investigates EAP students' conceptualization of SDGs and derives from data collected from 360 undergraduate students enrolled in the English language and literature department at a state university in Turkey. A descriptive survey design was employed to seek answers to the research questions, and both quantitative and qualitative data were collected from participants. Results revealed divergences between qualitative and quantitative findings. Quantitative findings indicated the predominance of the systems thinking perspective among the participants, suggesting that they viewed SDGs as a complex whole, encompassing various intertwined and interconnected elements. However, qualitative findings revealed the problematic conceptualization of SDGs, providing deeper insights into the phenomenon in question. In line with these findings, this study suggests several pedagogical implications for integrating SDGs into teaching practices.

Anahtar Sözcükler:

Sürdürülebilir Kalkınma Amaçları (SKA),

kavramsallaştırma

akademik dil olarak İngilizce,

Sürdürülebilir Kalkınma Amaçları için eğitim,

yükseköğretim

İngilizceyi Akademik Amaçlı Öğrenenlerin Sürdürülebilir Kalkınma Hedeflerini Kavramsallaştırmasını Keşfetmek: Yükseköğretim İçin Öneriler

Özet: Birleşmiş Milletler'in (BM) Sürdürülebilir Kalkınma Amaçları (SKA), sürdürülebilir bir dünya yaratmayı ve dünyayı etkileyen önemli sosyal, ekolojik ve ekonomik sorunlara kalıcı çözümler sunmayı amaçlamaktadır. Eğitim, bu hedeflerin yaygınlaştırılması ve kapsamlı bir anlayışla gerçekleştirilmesinde merkezi bir konuma sahiptir. Bu açıdan bakıldığında, İngilizce dili öğretimi, öğrencilerin akademik amaçları göz önünde bulundurularak SKA'ların dil öğretimine entegre edilmesine olanak sağlamak için elverişlidir. Tüm bunları göz önünde bulundurarak, bu çalışma İngilizceyi akademik amaçlarla öğrenen öğrencilerinin SKA'lar nasıl kavramsallaştırdığını araştırmaktadır. Çalışmanın bulguları Türkiye'deki bir devlet üniversitesinin İngiliz dili ve edebiyatı bölümünde kayıtlı 360 lisans öğrencisinden toplanan verilere dayanmaktadır. Araştırma sorularına yanıt aramak amacıyla betimleyici bir anket tasarımı kullanılmış ve katılımcılardan hem nicel hem de nitel veriler toplanmıştır. Sonuçlar nicel ve nitel bulgular arasındaki farklılıkları ortaya koymuştur. Bu bağlamda, nicel bulgular, katılımcılar arasında sistem düşüncesi perspektifinin baskın olduğunu göstermiş ve bu da katılımcıların SKA'ları iç içe geçmiş ve birbirine bağlı çeşitli unsurları kapsayan karmaşık bir bütün olarak gördüklerine işaret etmiştir. Ancak nitel bulgular, SKA'ların sorunlu kavramsallaştırılmasını ortaya çıkararak söz konusu olguya ilişkin daha derin içgörüler sağlamıştır. Elde edilen bulgular doğrultusunda, bu çalışma SKA'ları öğretim uygulamalarına entegre etmek için çeşitli önerilerde bulunmaktadır.

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1. Introduction

Over the past decades, advances in various domains have considerably changed our behaviors and daily routines, helping make life easier and increasing efficiency in daily work and production. In parallel, challenges and problems that human beings have been facing worldwide within the same time frame have also been rapidly increasing and exacerbating, thus culminating in sustainability problems in economic, ecological, and social domains. Such escalating problems are the indicators of major global issues that endanger future generations and pledge a gloomy future for the next generations. In line with this, all these issues entail actions to find sustainable solutions to eliminate their adverse global impacts. As a response to this pressing need, in 2015, the United Nations (hereafter UN) introduced the "2030 Agenda for Sustainable Development," encompassing 17 Sustainable Development Goals (hereafter SDGs) and 169 interconnected targets that aim to promote worldwide collaboration, commitment, and endeavors to rejuvenate our world regarding global peace and socio-economic well-being.

The effectiveness of such a global attempt to achieve these goals resides with significant changes in public perceptions, values, attitudes, and behaviors and providing appropriate circumstances to actualize these changes to ensure a sustainable future for the whole planet (Kioupi & Voulvoulis, 2019, 2022; Leicht et al., 2018; UNESCO, 2017). Education is a privileged and central position in achieving SDGs. The UN declares that quality education (Goal 4) is one of the most critical SDGs, whose main aim is to:

> By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. (UNESCO, 2020, p. 14)

This statement indicates that education for sustainable development (ESD) is positioned at the center of the UN's initiative as a catalyst for implementing these far-reaching reforms and, more importantly, reshaping future generations' attitudes and behaviors (Andersson, 2017; Clark, 2022; Sima et al., 2023). From this standpoint, ESD is beyond expanding learners' sustainability knowledge and strongly emphasizes social transformation through reorienting curricula and increasing public access to quality education (UN, 2012). Although the need for addressing and revising sustainability issues at all levels of education across the globe is strongly emphasized (UNESCO, 2014), higher education institutions have a leading role in educating future teachers and other human resources required to promote sustainability along with generating and disseminating knowledge through research (Berchin et al., 2021; Gholami et al., 2015; Lozano et al., 2022; Sima et al., 2019; Sima et al., 2022).

1.1. Theoretical Framework

Despite globally acknowledged policies and initiatives, as Ferguson et al. (2021) argue, sustainability is still viewed as a single-dimensional concept at the public level, and such monolithic perspectives indicate that individuals perceive or associate sustainable development with one dimension, for example, primarily associating it with environmental or social sustainability. On the other hand, the systems thinking perspective is at the heart of SDGs. This perspective adopts a holistic approach and recognizes the intertwined relations between SDGs' social, economic, and environmental dimensions (Ferguson et al., 2021; Kioupi & Voulvoulis, 2019). Understanding the way individuals conceptualize SDGs is

highly significant in reshaping and revising higher education to have a shared understanding of sustainability (Kioupi & Voulvoulis, 2019).

Additionally, integrating SDGs into higher education curricula through ESD practices has been the center of hot debates. Although there has been much consensus that ESD should be learner-centered and follow the principles of participatory and transformative learning, discussions on what is taught and how it is taught about SDGs still remain within the concerns of policymakers, curriculum designers, and educational researchers (Nguyen et al., 2022). Various states have so far included sustainability issues in their national curricula (UNESCO, 2014), yet this alone is not adequate to facilitate ESD, and curricular changes in higher education are considerably slower compared to other levels of education (Armstrong, 2011; Cotton et al., 2009; Nguyen et al., 2022). In line with these, as Cotton et al. (2009) underline, ESD practices are constrained in higher education at different levels (e.g., institutional level, curricular level, departmental level, instructional level etc.), and these constraints impair the effectiveness of ESD; thus, other alternatives should be sought and found to alleviate the conditions relevant to the current state. In such a case, practitioners should look for second-best chances to integrate SDGs into teaching practices. In the same vein, Kioupi and Voulvoulis's (2019) ESD model acknowledges such constraints and regards them as the root causes that make the current state of ESD unsustainable. From this standpoint, exploring and delineating these constraints play a critical role in designing steps to be taken to create second-best chances and facilitate the transition from the presently unsustainable condition of ESD toward a more sustainable state. As such, understanding university students' conceptualizations of SDGs is part of the initial steps since these conceptualizations may provide insights into their perception, knowledge, awareness, and attitudes toward these goals and guidance for what to teach and how to teach.

1.2. ESD and English as an Academic Language (EAP)

The systems thinking perspective is also apparent in integrating SDGs into curricula. In doing this, an interdisciplinary and cross-curricular approach is highly recommended to incorporate environmental, social, and economic dimensions into various appropriate courses. From this stance, language learning programs hold a critical position in ESD in that they "provide excellent opportunities to develop a global orientation to sustainability studies. This is particularly true at higher-grade levels when current publications in the second language can be used as source material" (UNESCO, 2018, p. 36). This view underscores that departments where the English language is used academically as a medium of instruction serve as appropriate settings for integrating SDGs into curricula and instilling students with the knowledge, understanding, skills, and attitudes toward sustainability (Levrai & Bolster, 2019). ELT has been changing considerably from a sole subject of a linguistic study to serving as a practical tool for different non-linguistic subjects and communication in linguistically and culturally different settings, and sustainability issues are among those non-linguistic subjects that ELT should and will increasingly incorporate into curricula (Grigaitiene, 2006). Besides, given that communicative competence is still highly prioritized in ELT because promoting mutual understanding among people from different linguistic and cultural backgrounds is among the ultimate goals of ELT (Maijala et al., 2023), Barili and Byram (2021) argue that it is also critical for building sustainable societies. Additionally, ELT pedagogy has been transforming into a more humanistic and learner-centered one; thus, issues such as interculturality, social responsibilities, and global problems are now among the concerns of ELT. Given that language teachers strongly influence their students' future attitudes (Maley & Peachey, 2017), if English learners remain indifferent to global problems and do not

actively participate in solving them, regardless of their fluency and accuracy in language use, it is hard to claim ELT's success (Jacob & Cates, 1999).

1.3. Literature Review

Recent international studies showed that in some countries (e.g., Australia, Norway, Spain, Sweden, etc.), the criticality of higher education for sustainable development has long been acknowledged, and it has been integrated into curricula and university culture despite various problems with the practice and outcomes (Aleixo et al., 2021; García-González et al., 2020; Tomas et al., 2017). Other studies indicated superficial ESD practices in higher education, the weight given to a particular dimension (e.g., environment) (Aleixo et al., 2021; Arroyo, 2015), insufficient institutional and curriculum support, affecting students' perceptions and leading to less sensitivity (Chan et al., 2017), misconceptions about sustainability (Seatter & Ceulemans, 2017), impositions on certain perspectives on students rather than fostering them to develop their own viewpoints (Andersson, 2017; Carew & Mitchell, 2008; Cotton et al., 2009), students' disengagement, boredom, and de-motivation for sustainability (Thomas, 2004).

In the Turkish context, previous studies on students' perception and understanding of sustainable development in the higher education context revealed that students needed to improve and deepen their conceptualization and knowledge of sustainable development (Bayraktar-Balkır, 2021: Gökmen et al., 2017; Tuncer, 2008) as they often associated SDGs mainly with a particular dimension (Çobanoğlu & Türer, 2015; Yılmaz Fındık et al., 2021). These problems underlined in the previous research mainly stem from research and teaching practices concerning sustainable development in Turkish higher education, which are heavily anchored in academic staff's initiatives and choices. As Yılmaz Fındık et al. (2021) underline, there is a lack of educational policies that regulate curricula in higher education and teaching practices for sustainability. In line with this, Öztürk's (2018) study showed that around one-third of the academic research on sustainable development directly focuses on higher education and most of these studies concern teacher education rather than other fields of studies and university students. Considering all these, understanding how EAP students perceive SDGs is critical in reshaping ESD.

1.4. The Present Study

Given that there is a paucity of research on EAP students' views about sustainable development in the higher education context, this study aims to investigate undergraduate students' conceptualization of SDGs and ESD in a detailed way and seeks answers to the following research questions;

1. From what perspective do they conceptualize SDGs, and what are their sources of information?
2. With what concepts do they associate SDGs?

2. Method

2.1. Research Design

This study employs a descriptive survey study design to explore students' conceptualization of SDGs in a cross-sectional way, as it enables the researcher to collect data from large samples through structured and unstructured items (Alshahrani et al., 2018) and provides data for retrospective or prospective inquiry (Cohen et al., 2018).

2.2. Participants

The convenience sampling method was used to determine the participants. This method allows researchers to collect data from a sample regarding accessibility, willingness to participate, geographic proximity, and availability during a particular timeframe (Stratton, 2021). Three hundred sixty undergraduate students enrolled in English language and literature participated in the data collection process. Participants' demographics are presented in Table 1.

Table 1.

Participants' demographics

Variable	Descriptors	n	%
Sex	Female	209	58.06
	Male	151	41.94
Grade	Freshman	97	26.94
	Sophomore	118	32.78
	Junior	24	6.67
	Senior	121	33.61
Nationality	Turkish	326	90.55
	Other (e.g., Azeri, Iranian, Turkmen etc.)	34	9.45
Age	18-21	189	52.50
	22-24	134	37.22
	Over 25	37	10.28
Previous participation in projects, workshops etc., on SDGs	No	345	95.83
	Yes	15	4.17
Prep class	No	198	55
	Yes	162	45
Previous knowledge about the SDGs	Not knowledgeable	180	50
	Somewhat knowledgeable	163	45.27
	Knowledgeable	17	4.73

2.3. Data Collection

The questionnaire was designed to collect both quantitative and qualitative data. Therefore, it consists of structured and unstructured items. Quantitative data were collected through Ferguson et al.'s (2021) SDGs perception questionnaire consisting of two different dimensions regarding monolithic perspectives (4 items) and systems thinking perspectives (10 items). Monolithic perspectives emphasize that individuals perceive or associate sustainable development with one dimension, primarily equating it with environmental sustainability. The systems thinking dimension refers to the links between environmental, economic, and social dimensions of sustainable development, and thus, items related to this issue aim to measure if the participants recognize these links between the dimensions of sustainable development. The Cronbach's alpha was found to be .870 for systems thinking perspectives and .808 for monolithic perspectives in Ferguson et al.'s (2021) study. In this study, it was found to be .797 for systems thinking perspectives and .715 for monolithic perspectives. These values confirm the reliability of the questionnaire (Cohen et al., 2018). Four open-ended questions were also addressed to the participants to gain deeper insights into their conceptualization of SDGs and ESD.

2.4. Data Analysis

Mean scores, frequencies, and statistical analyses for structured items were conducted through Statistical Package for the Social Sciences (SPSS). Mean scores were compared using parametric tests after the normal distribution was found through skewness (.629 for monolithic perspectives and -.376 for systems thinking perspectives) and kurtosis values (.237 for monolithic perspectives and .607 for systems thinking perspectives) were found between ± 1.5 (Tabachnick & Fidell, 2013). Braun and Clarke's (2019) thematic analysis method was employed to analyze responses to the open-ended questions using Atlas.ti. Irrelevant and ambiguous responses were not included in the data analysis process.

3. Findings

3.1. Quantitative Findings

The first research question aimed to investigate the way participants contextualize SDGs along with the sources of information. Table 2 presents descriptive statistics for items related to monolithic perspectives and systems thinking perspectives, respectively.

Table 2.

Descriptive Findings

Monolithic Perspectives Items	***M***	***SD***
1. We can do nothing to decrease the emissions that cause climate change.	1.81	1.04
2. Sustainable development emphasizes environmental degradation (e.g., lack of clean water, destruction of the forest, extinction of wild animals etc.)	2.35	1.11
3. Sustainability issues are not linked; each part is studied separately.	2.30	.981
4. Sustainable development focuses on environmental protection.	2.75	1.16
Systems Thinking Perspectives Items		
5. Environmental protection is an integral part of a country's development process.	4.44	.677
6. Recycling is good for the economy and the environment.	4.59	.689
7. Economic development, social development, and environmental protection are all necessary for sustainable development.	4.42	.659
8. Buying locally grown produce contributes to society's well-being.	4.23	.736
9. Sustainability issues are interconnected and should be studied holistically.	3.88	.816
10. People whose lives will be affected by the government's decisions must be involved in the decision-making process.	4.30	.845
11. Sustainable development seeks to balance human and economic well-being with cultural traditions and respect for the earth's natural resources.	4.16	.662
12. A basic principle of sustainable development is taking action to avoid the possibility of serious or irreversible environmental or social harm.	4.17	.639
13. Sustainable development challenges the government to greater transparency and accountability in governmental decision-making.	4.11	.729
14. Sustainable development seeks to eradicate poverty and reduce disparities in standards of living.	3.90	.845
Monolithic Perspectives Total	**2.30**	**.792**
Systems Thinking Perspectives Total	**4.22**	**.431**

As seen in Table 2, the participants' responses for Item 1 reveal the lowest mean score (*M*=1.81), indicating that they generally disagreed with the statement that nothing could be done to reduce the emissions paving the way for climate change. However, the moderate level standard deviation (*SD*=1.04) also shows some variability in the responses, suggesting that some participants strongly disagree with this statement. The rest of the items in this

dimension further elaborate the participants' monolithic perspectives. As for items 2 (*M*=2.35) and 3 (*M*=2.30), the findings show a moderate level of agreement for each. However, the standard deviation of Item 2 (*SD*=1.11) suggests response variability, whereas it (*SD*=.981) indicates the participants' shared view on this aspect. Item 4 (*M*=2.75) has the highest mean score and standard deviation (*SD*=1.16) in the monolithic perspective dimension. This indicates the participants' relatively stronger agreement with this item and variability in the responses. Overall, based on these findings, it can be stated that although the participants tended to associate sustainable development with environmental issues, they also believed that sustainability was not restricted to these issues and extended beyond them as each dimension influenced one another.

As for the systems thinking perspectives, findings show a higher mean (M=4.22) score and lower standard deviation (*SD*=.431), indicating that the participants shared a coherent understanding of systems thinking related to sustainable development. Items 5, 6, 7, and 8 revolve around the criticality of environmental protection, recycling, and the interconnectedness of environmental, economic, and social dimensions of SDGs. Items 5 (*M*=4.44, *SD*=.677) and 6 (*M*=4.59, *SD*=.689) establish links between economic growth and environmental protection. Item 8 (*M*=4.23, *SD*=.736) relates local production with social welfare, whereas Item 7 (*M*=4.42, *SD*=.659) is a more general statement related to the dimensions of SDGs. All these items have the highest mean scores and relatively lower standard deviation. Items 10, 11, 12, and 13 incorporate more intricate relations between the three dimensions and have mean scores higher than four, indicating participants' agreement with sustainability principles, such as the effects of governmental decisions (*M*=4.30), the balance between human beings and economic well-being (*M*=4.16), avoiding harm (*M*=4.17), and promoting governmental transparency and accountability (*M*=4.11). On the other hand, items 9 (*M*=3.88, S*D*=.816) and 14 (*M*=3.90, *SD*=.845) have the lowest mean scores in the systems thinking dimensions and high standard deviations. Item 9 focuses on the interconnectedness of sustainability issues in terms of the way they should be studied, whereas Item 14 pertains to sustainable development with poverty and inequalities. Mean differences between systems thinking and monolithic perspectives were analyzed to delve further into the participants' conceptualization of SDGs.

Table 4.

Mean Differences

	Mean Differences					
	Mean	SD	St. Er. Mean	*t*	df	Sig. (2-tailed)
Systems Thinking Perspectives Monolithic Perspectives	1.91	.972	.051	37.44	359	.000*

**p<.01*

The paired-sample t-test was used to compare mean scores (see Table 4). Findings showed a large *t*-value (37.44) and a very low *p*-value (p<.01), indicating that the mean difference is highly improbable to have occurred by random chance. The high mean score of the systems thinking perspectives compared to monolithic perspectives reveals that most students had systems thinking views of sustainable development. Therefore, these quantitative findings suggest that most participants conceptualized SDGs as a complex whole, with intricate and interwoven elements encompassing economic, environmental, and social issues.

In line with the first research question, this study also investigated participants' sources of information on SDGs. Table 5 presents frequencies and percentages of sources of information on SDGs.

Table 5.

Sources of Information on SDGs

Sources*	**f**	**%**
Social Media (e.g., Instagram, Facebook, YouTube etc.)	233	64.7
Websites	232	64.4
Friends and social environment	91	25.3
Public advertisement	68	18.9
Books (fictional and non-fictional books)	65	18.1
Tv	53	14.7
Undergraduate courses	45	12.5
Newspapers	20	5.6
Radio	6	1.7

** Participants were allowed to choose multiple options while responding to this item.*

Findings reveal that online sources (social media and websites) emerged as the predominant sources, whereas friends and social environment, along with public advertisement and books, followed these sources to a lesser extent. Additionally, conventional media tools (e.g., TV and radio channels, newspapers) and undergraduate courses emerged as the least represented sources of SDGs. Accordingly, these findings suggest that participants heavily relied on online sources, particularly social media, to be informed about SDGs. Furthermore, the representation of friends and social environment as a source of information also highlights the role of interpersonal networks and social circles in information sharing.

3.2. Qualitative Findings

The second research question aimed to gain deeper insights into sustainability and focused on the concepts with which the participants primarily associated SDGs through open-ended questions. Table 6 presents the main concepts, themes, descriptors, frequencies, and percentages. Overall, findings indicated two main concepts based on the participants' responses: dimensional and implementational circles. The dimensional circle (f=675, 64.96%) incorporates three themes related to the core domains of SDGs: environmental (f=307, 29.54%), social (f=279, 26.85%), and economic (f=89, 8.57%), whereas the implementational circle (f=364, 35.04%) clusters around the themes reflecting participants' views about the actualization of SDGs. In this circle, five themes emerged from the responses: operational strategies (f=88, 8.46%), time span (f=80, 7.69%), agency orientation (f=73, 7.03%), spatial scope (f=71, 6.84%) and integrated approach (f=52, 5.02%), respectively.

Compared to the dimensional circle, findings indicated relatively narrow variations in frequency within the implementational circle. In the operational strategies theme, the incorporation of definitional keywords signified strategies and steps taken to translate SDGs into practices. For instance, Student 43 defined SGDs as "actions taken for the development of the country considering the present and the future," whereas Student 27 regarded these goals as "initiatives launched for a better world" and Student 139 as "an eco-friendly development model." As can be seen in these quotes, participants regarded SDGs as an array of essential instruments encompassing actions, initiatives, and projects. Low-frequency

differences among the keywords suggest that participants had difficulty fundamentally defining SDGs.

Table 6.

Conceptual Framework of SDGs

Conceptual Framework of SDGs	**Themes**	**Descriptors/Keywords***	**f**	**%**
Dimensional Circle	Environmental dimension	Saving resources (68), eco-friendly lifestyle (59), eco-friendly development (55), protecting nature (39), better world (34), recycling (20), clean energy (20), climate change (12)	307	29.54
	Social dimension	future generations (105), meeting needs (56), social issues (49), better living conditions (39), equalities (16), education (6), peace (8),	279	26.85
	Economic dimension	economic growth (68), welfare (15), investments (3), employment (3)	89	8.57
		Theme Total	675	64.96
Implementational Circle	Operational strategies	actions (18), initiatives (14), model (14), plans (14), policies (14), projects (13), approach (8), policies (7)	88	8.46
	Time span	Continuous/ongoing (71), systematic (8), long-term (1)	80	7.69
	Agency-oriented	state/government (34), individuals (24), society (11), private/non-governmental institutions (4),	73	7.03
	Spatial scope	global (37), nation-wide/regional (34)	71	6.84
	Integrated approach	Balanced (28), holistic (24)	52	5.02
		Theme Total	364	35.04

* Descriptors/keywords are given in descending order based on the frequencies. Numbers given in parentheses following each descriptor/keyword indicate the frequency related to that word for the brevity of the table.

The second thematic strand that emerged in this circle is time span, referring to the length or temporal duration over which SDG practices are enacted. The analysis of the participants' responses underscored a prevailing association between the implementation of SDGs and the notions of continuity and systematisms. The following remarks best summarize participants' views.

> *I think sustainability emphasizes ongoing progress in caring for different areas of life.* (Student 79)

> *Sustainable development requires continuous advancements done in a systematic way so that all human beings can benefit from all resources now and in the future.* (Student 271)

The third theme, agency orientation, refers to identifying the key actors or entities responsible for implementing or actualizing SDGs, and responses indicated that participants viewed states/governments, individuals, society, and institutions as responsible for implementing SDGs, respectively. Although all these are among the main actors of SDG practices, the frequencies of descriptors indicate that states/governments and individuals had the leading role in such practices.

> …*these areas are priority targets of the state on an administrative basis and will ensure development*… (Student 168)

> [SDGs] *are about organizing the actions taken by people from all walks of life for the benefit of society in a sustainable manner.* (Student 146)
>
> *It is an administrative principle applied to increase a country's welfare and enable people to achieve their development goals…* (Student 275)

Spatial scope, the fourth theme, addresses the geographical range and extent within which SDGs are practiced, and participants' responses in this theme were bifurcated and reflected two divergent viewpoints. For some participants, SDGs were perceived as focusing on national or state-level contexts, whereas others viewed SDGs from a broader perspective and underlined that these goals had a global scope. The following quotes exemplify these two different viewpoints.

> *Sustainable development is a solution for major global problems such as population increases and depletion of resources to ensure that future generations can continue using them.* (Student 38)
>
> *Sustainability refers to developing a country effectively and sustainably using natural resources wisely and without harming the environment.* (Student 219)

The final theme, the integrated approach, is least represented in this conceptual framework, yet it is critical as it underlines the interconnectedness and interdependency among SDGs and practices related to these goals. Participants' responses revealed a consensus that a balanced or holistic approach was essential for achieving these goals. The following quote concisely encapsulates participants' perspectives on the integrated approach.

> *Sustainable development equals achieving human development goals, considering ecological, economic, and social issues in balance, for example, giving equal importance to the continuity of natural resources, economic growth, eliminating gender and wealth inequalities, and educating people.* (Student 247)

4. Discussion

The centralized position of ESD in disseminating and achieving SDGs entails integrating these goals into higher education curricula considering discipline- or field-specific relevance (Sima et al., 2022). The discipline-based and communicative nature of teaching English within the EAP context makes classrooms convenient for ESD practices (Levrai & Bolster, 2019). Given that ESD practices in higher education have constraints, often making its current state unsustainable, creating second-best chances for integrating SDGs into teaching is highly critical (Cotton et al., 2009; Kioupi & Voulvoulis, 2022), particularly in contexts where these goals are not incorporated into the existing curricula. In such cases, exploring students' perceptions, knowledge, and awareness provides valuable insights into a better understanding of the current state. With these in mind, this study investigated 360 EAP students' conceptualization of SDGs, collecting quantitative and qualitative data through a questionnaire.

Quantitative findings showed a great mean difference between participants' systems thinking perspectives and monolithic perspectives. This finding indicates that participants viewed SDGs as a multifaceted concept consisting of various elements that are interdependent and interconnected with one another, meaning improvements or deterioration in one system inevitably influences the other systems. These results concur with those revealed in Ferguson et al.'s (2021) study. In addition, in this study, the four items (Items 5, 6, 7, and 10) with the highest mean scores and the two items (Items 9 and 14) with the lowest mean scores in the systems thinking dimension are the same as in Ferguson et al.'s (2021) study. Although the mean difference between systems thinking perspectives and monolithic perspectives was high, what is more surprising is the item having the lowest mean scores in the systems

thinking perspectives dimension simply because this item is directly related to the interconnected nature of sustainable development (Item 9). This finding alone accentuates the significance of collecting qualitative data for gaining deeper insights while investigating such issues as perception, conceptualization, or awareness.

In line with this, qualitative findings revealed some intriguing insights into how participants perceived and conceptualized SDGs. It is evident that participants' understandings of the SDGs clustered around two distinct circles: one representing the dimensions of SDGs and the other representing the implementation aspects of these goals. Interestingly, their conceptualizations heavily relied on environmental and social dimensions. While responding to open-ended questions in their own words, participants mainly associated SDGs with environmental and social issues. This finding highlights that despite the quantitative findings suggesting the system thinking perspective, there was a notable underrepresentation of the economic dimension and other themes within the implementational circle. Therefore, it also portrays a picture of the problematic conceptualization of SDGs, singling out environmental and social dimensions and overlooking the broader economic dimension and other interrelated aspects in conceptualizing these goals. Given that the integrated approach theme is the least represented, findings related to this theme also underpin participants' problematic conceptualization of SDGs simply because this theme emphasizes the interconnectedness and interdependency among SDGs and practices related to these goals. Findings related to other themes within the implementational circle also provide evidence for participants' problematic conceptualization of SDGs.

Additional findings within the implementational circle shed further light on participants' struggles in defining SDGs. For instance, participants' responses related to operational strategies, agency orientations, and spatial scope indicated dissonances in their views about defining SGDs, the key actors responsible for implementing these goals, and their scopes. Accordingly, participants seemed uncertain about whether SDGs should be considered actions, initiatives, or models. Furthermore, their responses also exhibited ambiguity concerning whether these goals should be implemented globally or locally and whether responsibility lies with governments or individuals. Despite the existence of other associations (e.g., operational strategies, time span, agency-oriented, spatial scope, integrated approach), these inconsistencies in their views suggest that participants had difficulty articulating the complexity of SDGs, further highlighting the problematic nature of their conceptualizations. Kagawa's (2007) study identified similar disparities in perceptions of SDGs among university students. Therefore, echoing Kagawa (2007), it should be underlined that the predominance of the system thinking perspective in quantitative findings does not mean that participants "understand either the contested and multifaceted nature of sustainability or the holistic nature of the concept;" instead, such findings underscore "knowledge gaps" in student's understandings of sustainability (p. 332). These qualitative findings also align with prior research, indicating that university students tend to have limited and restricted conceptualizations of SDGs (Bayraktar-Balkır, 2021: Çobanoğlu & Türer, 2015; Gökmen et al., 2017; Tuncer, 2008; Yılmaz Fındık et al., 2021).

Divergences between quantitative and qualitative findings may be attributed to the sources of information on which participants relied. As findings showed, online sources and participants' social environment emerged as the main sources of information for SDGs. These findings also resonate with previous studies yielding similar results. Yuan et al.'s (2021) study showed that students had a limited understanding of SDGs, and traditional media and social media appeared as the main sources of information, although they received

information about SDGs in their formal education. Similarly, Smaniotto et al. (2022) also revealed that the internet was the main source of information through which teachers were primarily informed about SDGs. Given that online platforms often provide concise and incomplete information (Holmes et al., 2022) and social media is notorious for misinformation (Bernsteiner et al., 2023) and disseminating conflicting realities (Arikan, 2016), participants' reliance on online sources might have paved the way for their limited conceptualizations. Also, these divergences might have stemmed from the response mode in that responding to closed-ended questions is often simpler than explaining concepts or terms in writing or orally (Alvarez-Garcia et al., 2017; Arslan et al., 2012). Therefore, it can be said that closed-ended questions may have yielded more concise but potentially less insightful responses.

5. Conclusion and Implications

This study investigated EAP students' conceptualization of SDGs and derived from data collected from 360 undergraduate students enrolled in the English language and literature department at a state university in Turkey. Data analysis revealed divergences between qualitative and quantitative findings. Quantitative findings indicated the predominance of the systems thinking perspective among the participants, suggesting that they viewed SDGs as a complex whole, encompassing various intertwined and interconnected elements. However, qualitative findings revealed the problematic conceptualization of SDGs, providing deeper insights into the phenomenon in question. Although eight themes in two different circles emerged from the qualitative data, qualitative findings showed that participants mainly associated SDGs with environmental and social issues. Due to these divergences, it can be said that participants were inclined to view SDGs as a system, yet they encountered challenges when attempting to articulate the intricate interconnection among its elements and identifying other essential components of this system. Given that higher education institutions in Turkey incorporate various contextual variables, it should be underlined that it is hard to make generalizations based on these findings as data collected from a sample of ELL students within the EAP context at a single state university. However, the detailed picture of students' conceptualizations of SDGs may serve as valuable guidance for educators and practitioners seeking ways to understand their students' conceptualization of SDGs. In addition, these findings may also offer an opportunity for researchers to conduct comparative analyses with their own data, enriching the discourse on SDGs and ESD.

In line with the findings, this study suggests several pedagogical implications. The findings of this study underscore the need for curricular change that leaves room for integrating SDGs into higher education curricula, and such a change entails amalgamating both top-down and bottom-up approaches. Accordingly, higher education institutions should encourage faculties and departments to design and incorporate learning outcomes related to SDGs and to align course contents to SDGs as much as possible, considering the distinctive features of each academic field. An introductory course for first-year students may also be helpful to imbue them with the fundamental knowledge, skills, and awareness of sustainability. A similar application was initiated by the Council of Higher Education in Turkey in 2020, and first-year university students are required to take a career planning course to increase their awareness and knowledge about planning their careers. As for the bottom-up approach, academic staff members should seek ways to better incorporate SDGs into their courses, which should be administratively supported. While integrating SDGs into teaching practices in higher education, either through curricular changes or practical applications carried out by academic staff members, students' conceptualization of these goals and sustainability should

be delineated. In the case of ELL departments, the value of literary works for teaching SDGs is evident as these texts increase students' understanding of SDGs and motivate them to take action toward a sustainable future (Guanio-Uluru, 2019; Lin & Li, 2022; UN, 2017). Therefore, themes, characters, settings, and other instances given in literary texts can be used to imbue students with a multi-dimensional understanding of SDGs and lead to positive attitudinal and behavioral changes. Given that the curricula of ELT departments also involve literature-oriented courses (Diaz & Arikan, 2016), these texts can also be utilized to teach SDGs to pre-service teachers. Despite the lack of studies investigating course materials used in higher education in terms of SDGs, commercial English coursebooks frequently used in higher education institutions in Turkey involved both visual and written elements that discriminate gender, disability, and ethnicity (Bulut & Arikan, 2015), which contradicts with Goal 5 and Goal 10 in SDGs. Considering this, there is also a pressing need for designing instructional materials that align with SDGs. Lastly, as social media and other online sources emerged as primary sources of information, there is also a need for reliable online platforms or official social media accounts involving written and visual documents that appeal to university students' needs and interests. Besides, instructional materials or learning activities focusing on SDGs should also be designed to facilitate the use of reliable online sources. However, these sources should be integrated into teaching practices meaningfully rather than making students watch YouTube videos (Korkmaz & Mirici, 2021).

Note on Ethical Issues

Ethical permission for this study was attained from the Ethics Committee of Akdeniz University (E-55578142-050.01.04-738793). This study is the expanded version of the paper presented at GlobELT 2023: 9th International Conference on Teaching English as an Additional Language.

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