

Raising Saudi Students' (Energy) Sustainability Awareness through ESL – Teachers' Thoughts

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Abstract

This inaugural qualitative study solicited English as Second Language (ESL) teachers' thoughts about using ESL to teach Saudi Arabian (SA) university foundation year students about and raise their awareness of energy and sustainability issues. Fourteen participants from three higher education institutions in the Eastern Province of SA prepared typed responses in a word office document to 15 questions pertaining to ESL teachers' perceptions, opinions, beliefs, attitudes, knowledge, and values of using ESL to teach sustainability. Data returned by email were iteratively read and insights culled to provide an inaugural profile of ESL teachers' thoughts about this pedagogical innovation in SA higher education preparatory-year programs. The findings indicated a positive picture towards incorporating sustainability topics into Saudi Arabian ESL curriculum. Participants were enthusiastic about such tasks and about seeking knowledge related to sustainability by various means to augment lack of knowledge. They were of the opinion that this is a legitimate role for ESL teachers and believed that they would be effective and bring value to students' learning. They readily suggested rich ideas about what a sustainability-infused ESL curriculum would look like. This study was an original one in that it solicited and shared the voices of ESL teachers in SA about the idea of concurrently teaching language and sustainability. Nominal research addresses this pedagogical approach meaning the findings are valuable to ESL training schools, SA university foundation program planners, SA higher education curriculum developers and higher education human resource managers who recruit and hire ESL instructors.

Keywords: sustainability, student awareness, ESL teachers, Saudi Arabia, university foundation year, energy issues.

Introduction

Until recently, Saudi Arabian (SA) citizens have been living in an oil-rich environment with little need to conserve closer to home (Alyousef & Varnham, 2010). Sustainability knowledge in the Arab region is generally poor (Mezhar, Noamani, Abdul-Malak, &

Maddah, 2011). A recent study established that SA university students have an immediate need for *energy literacy* and sustainability pedagogical education (Alghamdi & El-Hassan, in press). Ideally, SA students would be introduced to sustainability issues in their foundation year, completed before they formally enroll as a university student. Saudi university preparatory programs are designed to hone students' math, language and study skills and perhaps basic computer skills. Unfortunately, existing sustainability-focused courses offered at the university are not designed for, nor provided to foundation-level students.

The current study operated on the premise that because English as a second language (ESL) and English as a Foreign Language (EFL) are part of the Saudi university foundation year, there is an opportunity for ESL instructors to teach sustainability. Given that, the higher education sector in the Kingdom of Saudi Arabia (KSA) employs qualified overseas teachers to teach English (expatriates or expats). These ESL practitioners are often from countries where sustainability is a focus in the national curriculum, such as in the United Kingdom (UK) and the United States (US). These internationally accredited ESL professionals not only have language teaching skills and experience; moreover, they likely have basic understandings of sustainability issues. The possibility of delivering sustainability-themed ESL lessons may accelerate developing Saudi university students' energy literacy.

In effect, the authors are advocating for a content-based language teaching approach. Brown (2011) explained that the 'weak' form of this approach values the teaching of content and language equally while the 'strong' form privileges content over language. SA is actively striving for university graduates to be fluent in English (Al-Sobhi & Preece, 2018) partly in response to the globalization and modernization policies adopted in 1990s (Alshahrani, 2016). The weak-form approach is thus recommended because students would equally learn both English and sustainability. Nashat affirmed that education for sustainability (ESD) "can easily be used to teach language" (2011, p. 1). However, "the use of sustainability-based lessons, projects, and courses in the teaching of English as a foreign language is still relatively uncommon" (Nanni, Serrani, & Quiet, 2015, p. 72).

Focusing on this gap in practice, the overarching research question guiding this qualitative study is: 'What are ESL teachers' thoughts about using ESL to raise students' awareness of energy and sustainability issues in Saudi Arabia?' The research objective was to explore the idea of having ESL teachers instill basic knowledge about and raise SA students' awareness of energy and sustainability issues in their English lessons at the university foundation level. Achieving this objective involved soliciting ESL teachers' thoughts about using ESL to teach sustainability while teaching English: their perceptions, opinions, beliefs, attitudes, knowledge and values.

Literature Review

To develop this idea, the reviewed literature focused on substantiating the need for sustainability education (i.e., the earth in crisis and Saudi Arabia's role), the role education plays in fulfilling this need, the Qur'an's inclusion of environmental protection, and the unique role ESL instructors can play in teaching sustainability and energy issues while teaching English.

Earth in Crisis

Planet Earth is in crisis; Saudi university students *must* become energy literate and embrace sustainability (Alghamdi & El-Hassan, in press). Scientists have long warned about the global warming phenomenon and foretold the consequences of excessive carbon dioxide (CO₂) emissions evident in climate change. However, most people and corporations have not regarded the global impact of the loss of glaciers, rising sea levels, extreme weather conditions, and extinction of non-human species – all impacting humanity's survival. The scientific community explains that we have a very limited time to address the climate crisis before we surpass irreversible tipping points and lose control over global warming (British Broadcasting Corporation, 2019). Social movements, such as Extinction Rebellion (x.rebellion.org, 2019), and declaration of Climate Emergency (at national and local government levels) have been increasingly gathering their momentum, especially in Europe including the UK, North America and Australasia (Climate Emergency Declaration, 2019).

Saudi Arabia's Role

Evidence confirms that the primary cause of excessive atmospheric CO₂ is the burning of fossil fuels (NASA, 2019), especially crude oil. Of relevance to this study is the fact that Saudi Arabia is a key producer of crude oil possessing nearly one fifth (18%) of the world's reserves. It is the largest exporter of petroleum in the world. Oil accounts for 50% of Saudi's Gross Domestic Product and 70% of its export earnings. Saudi Aramco, the state-owned Saudi Arabian Oil Company continues to expand existing crude oil fields, identify new ones and improve production. It intends to double its natural gas production in the next ten years (Export.gov, 2018). This intentional expansion of oil and gas extraction makes it even more imperative that Saudi citizens (including preparatory year university students) are cognizant of both their attendant responsibilities in this crisis and potential role in ameliorating it especially in their home country.

Education is the Key

The United Nations (UN) (2015) adopted resolutions to establish 17 Sustainable Development Goals (SDGs) to be achieved worldwide by 2030. They deal with achieving sustainability in natural resources (e.g., Goals 6 and 14), environmental health (Goal 15), economic growth and employment (Goal 8), infrastructure and sustainable industrialization (Goal 9), consumption and production patterns (Goal 12), and gender equality (Goal 5). In SA, "SDG-related activities will proceed hand-in-hand with the implementation of Vision 2030" (Kingdom of Saudi Arabia, 2018, p. 165). Very recently, "a Royal Order was issued to include the SDGs into education curricula. Work is in progress towards this end, led by the Ministry of Education" (Kingdom of Saudi Arabia, 2018, p. 24).

Three SDGs are particularly relevant to this research about ESL instructors teaching sustainability issues: (a) *Goal 3*. Ensure healthy lives and promote well-being for all at all ages, (b) *Goal 4*. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, and (c) *Goal 13*. Take urgent action to combat climate change and its impacts (United Nations, 2015). Briefly, the authors reasoned that reducing CO₂ emissions to combat climate change can be aided by providing respon-

sive, quality education (i.e., ESD, Goal 4.7) especially through sustainability-themed second language education. The latter should help raise SA university preparatory level students' awareness of sustainability issues (Goal 13.3). Otherwise, current and future generations will not be able to live a healthy life (Goal 3.9) on a sustainable planet.

Qur'anic Verses on Environmental Protection

Asking expat ESL teachers working at a Saudi university to teach sustainability issues is further supported by tenets of the Islamic faith. The Holy Qur'an entrenches the notion of the sacredness of the environment and humankind's obligations to steward and respect it (Bin Muhammad, Shah-Kazemi, & Ahmed, 2010). *He it is Who hath made the earth subservient unto you, so walk in the paths thereof and eat of His providence...* (The Holy Qur'an, Al-Mulk 67: 15). This verse means the earth was made subservient to humankind; therefore, people need to take good care of it and maintain the balance of nature (Bin Muhammad et al., 2010).

In addition, *O mankind! Eat of that which is lawful and wholesome on earth, and follow not the footsteps of the Devil...* (The Holy Qur'an, Al-Baqara 2: 168). This verse refers to the need for humankind to combat evil desires, selfishness and excessive neediness of natural resources and earthly possessions. Connecting and re-connecting with the Creator through prayers leads people to take actions in recycling, energy conservation, environmental protection, tree planting, creating a plastic-free environment, and seeking knowledge in caring for the environment through research. "In short, we must 'reduce' our modern lifestyles and our own carbon footprints in every act in our – and our children's – daily lives as much as we can so that we really contribute to alleviating this crisis" (Bin Muhammad et al., 2010, p. 41).

Education for Sustainable Development (ESD)

ESD or Sustainability Education has become a much-needed discipline of education as a result of the UN's Agenda 21 (United Nations, 1992). "Transformative education" as a new pedagogy, therefore, has to replace the "transmission model" of teaching and learning, which is still being practiced at educational institutions at present according to Bell (2016, p. 52). By contrast, the teacher facilitates the acquisition of skills and competences and inspires and guide [his or her] students-as-learners in addition to essential values and knowledge when "transformational" education is implemented. Bell (2016) maintained that the sustainability context must be central to twenty-first century education. As the "green economy" is emerging, students need to build skills that bring about innovation and creativity, which ensues a sustainable planet, sustainable economy, sustainable enterprise and affordable health care and thus, ESD, is central to twenty-first education. The skill sets include: "skills for living in the world", citizenship, life and career, and personal and social responsibility. (Bell, 2016, p. 55).

Language Education for Sustainability

Zygmunt saw the importance of socio-cultural aspect of sustainability (as a notion) while most scholars focus on its environmental, economic and social domains (2016). Socio-cultural area encompasses language, ways of communication and thought. "[A]

fully developed thinking process makes human beings sensitive to the outer world and its needs which simultaneously become human needs” (Zygmunt, 2016, p. 113). Zygmunt (2016) also maintained that language plays a constitutive role in human life because of its multiple function that connects with perception, thinking, memory, and expression (p. 115). A language user needs to conduct negotiations and hold discussions over environmental issues and to be tactful to his or her interlocutor. Hence, foreign language education is vital for the success of ESD (Zygmunt, 2016, p. 116). Saudi university students are language users (whose mother tongue is Arabic) in the classroom, where they communicate sustainability and other issues, using English as a foreign language.

Unique Role of ESL and Sustainability Awareness

As noted earlier, using ESL to teach sustainability issues is not yet best practice (Nanni et al., 2010). Nevertheless, some countries are reporting success with this approach. In Cameroon, Nkwetisama (2011) asserted that ESL teachers can do more than just teach the language. Nkwetisama (2011) pointed out that “EFL/ESL teaching should not only be limited to the improvement of learners’ language proficiency but also to enable them develop critical thinking strategies that can be useful in environmental sustainability” (p. 111). He hoped that the EFL/ESL teachers would rethink and extend the aims of their teaching profession, which would involve creating materials for simultaneously teaching English and developing environmental awareness.

Nashat (2011) exemplified Brown’s (2011) weak form of content-based ESL when teaching persuasive writing skills by getting students to address the issue of taxing bottled water in Egypt. Nkwetisama (2011) drew on important and complex global sustainability issues to teach Cameroon students critical thinking skills. He also reinforced the importance of using ESL to teach students about the complex relationship between ideologies (power) and language to help them critically understand sustainability. When teaching English for Academic Purposes (EAP), Nanni et al. (2015) drew on project-based learning to teach Thai students the English language while they learned about the Triple Bottom Line (TBL) framework (people, planet, and profit) for investigating the sustainability of major international corporations.

Reorienting ESL Teacher Education for Sustainability

ESL lessons enriched with sustainability-related content are “an excellent medium for language learning” (Nashat, 2011, p. 40). This approach means students can learn about both the English language and sustainability (Brown, 2011; Nashat, 2011). By association, in addition to learning how to teach English, ESL teachers will need to draw upon and/or receive training for and learn about sustainable development and energy issues (Nkwetisama, 2011). To that end, UNESCO (2005) issued guidelines that teacher education institutions can follow when reorienting teacher education to address sustainability; these also apply to ESL credentialing programs.

In particular, UNESCO (2005) recommended that teacher credentialing programs provide opportunities for pre- and in-service students to (a) practice higher-order thinking, (b) learn how to incorporate participatory pedagogies into their teaching, (c) discuss social justice and equity, (d) critically analyze and augment national and provincial

subject curricula with sustainability-related concepts, and (e) engage in values reasoning and values clarification.

ESL Teachers' Thoughts about Teaching Sustainability

The aforementioned successful examples of using ESL to teach sustainability prompt exploration of teachers' thoughts about using this pedagogical strategy. They are being asked to take on the double-duty of teaching English and teaching sustainability. Little if any research has been done around the topic of teachers' thoughts about this, especially in SA where learning English is prioritized and crude oil is the mainstay of the economy albeit exacerbating rising CO2 emissions. The research objective for this study concerns exploring SA ESL teachers' perceptions, opinions, beliefs, attitudes, knowledge and values of using ESL to teach sustainability. Conceptually, these six dimensions of 'thought' differ but collectively they contribute to an inaugural profile.

Succinctly, *perception* is tied to using one's senses to acquire information from the surrounding environment or situation. The result is an attitude or understanding based on what was observed. Perceiving often involves noticing things that escape the notice of others or 'seeing' things in a particular way. *Opinions* are views people take and convictions they hold about an issue based on their personal consideration and judgement (not necessarily facts). *Beliefs* are assumptions and convictions that people hold to be true usually based on past experience (Anderson, 2014; De la Sierra, Smith, & Mitchell, 2017; Kumar, 2018).

An *attitude* is a settled way of feeling or thinking about something. It is a positive, negative or neutral disposition or inclination towards something (e.g., a like or dislike). Information is outside the brain and able to be perceived; *knowledge* is something people know or understand through complex cognitive processes – it is inside the brain. If something is *valued* it is important to people and may drive and guide their behavior (knowingly or not) (Anderson, 2014; De la Sierra et al., 2017; Kumar, 2018).

Method

This qualitative study augmented a previous work that employed a quantitative survey confirming the need for energy literacy education in SA higher education institutions (Alghamdi & El-Hassan, in press). The current study was considered a qualitative study in nature because participants provided detailed typed responses to a set of questions designed to solicit their thoughts on using ESL to teach sustainability. Their words are the qualitative data.

Participants

50 ESL teachers in three higher education institutions in the Eastern Province of SA were approached in person or by email either through the researchers' personal contact or the supervisors at respective institutions. The study inclusion criteria included being an internationally accredited ESL educator teaching ESL/EFL in a lower university level (e.g., preparatory program, foundation year) with or without knowledge of energy and sustainability issues. Each potential participant received an introductory letter that stated the purpose of the study, assured confidentiality and anonymity, explained the

two methods of participating (an interview or typed responses returned via email) and outlined the study questions. Owing to the qualitative nature of the study, the targeted number of participants were 12 teachers and finally 14 participated in the study, representing a 30% response rate (Creswell, 2009).

Data Collection Instrument

Based on the six dimensions of teachers' thoughts about using ESL to teach sustainability, 15 questions (set out in a two-page word office document) were developed focused on perceptions, opinions, belief, attitudes, knowledge and values. Each dimension included two questions, respectively in numerical order (e.g., perceptions is Questions 1, 2 and 3). Participants typed their thoughts for each question (stated in the findings) into the document.

Data Collection

Data were collected in February and March, 2019. No one opted for a face-to-face interview. Participants were given three days to submit their responses via email, prompted with a follow up email. Participants were alphabetically assigned a pseudonym as their email containing their answers was received, recorded on excel worksheets and archived with dates to provide an audit trail. Data were then transferred into 15 word documents, one for each question. These data were then collated into six different word documents, one for each 'thought' dimension. Data collection steps were chosen to increase dependability, which requires the research process to be logical, traceable and clearly documented (Tobin & Begley, 2004). Data were analyzed by more than one researcher, contributing to credibility (researcher triangulation) (Côté & Turgeon, 2005).

Data Analysis

Data were iteratively read and insights culled, summarized and reported, organized by the six dimensions of teachers' thoughts about using ESL classes to teach sustainability. When appropriate, descriptive statistics were employed (e.g., frequency, means). Direct quotations were used to provide manifest evidence of teachers' thoughts, augmented with the researchers' paraphrasing and interpretation of latent threads of thought (Creswell, 2009). An inaugural summary profile emerged reflecting ESL teachers' thoughts about this pedagogical innovation in SA university foundation-year programs.

Findings

The qualitative data from the 14 participants were presented using the six dimensions of ESL teachers' thoughts about using English language training to teach sustainability to university foundation year Saudi students: perceptions, opinions, beliefs, attitudes, knowledge and values. Relevant questions for each dimension are integrated into the report.

Perceptions. Three questions were designed to explore participants' perceptions about using ESL to teach sustainability. To reiterate, a perception is an understanding

or insight gained from observing and gleaning information from a situation or surrounding environment.

Question 1: “From what you have *observed*, what do you think is the value of raising students’ awareness of energy or other sustainability-related issues at national and global levels?”

Several participants agreed that it would be very valuable to raise students’ awareness of sustainability because, as Kate said, they had observed that students “are not really aware of these issues.” Anne concurred, having observed that in the KSA, “there is very little emphasis on sustainability-related issues.” Noor also understood it to be valuable because she had observed unsustainable student behavior at the university, including “not bothering to switch off the light when leaving the room.” Such a small thing is significant because it reflects students’ awareness and attitudes.

Based on her observations, Debbie specifically stated that “ESL teachers are... in a unique position to reach this important target group,” which consists of ESL students who are “the young, future leaders of societies.” Ella perceived that raising students’ awareness of sustainability-related issues would widen their world view and help them realize they are “a part of something bigger.” Similarly, Gina emphasized the importance of educating and motivating students about energy efficiency, which is crucial when the aim is “to create long-term and sustainable change.”

Question 2: “Do you think ESL teachers can play a role in raising students’ awareness of energy or other sustainability-related issues? What knowledge and skills will you need to conduct a lesson that has such purpose in mind?”

Based on their observations, the majority (64%, n=9) of participants perceived both that ESL teachers can play a role and this role is important or very important. To illustrate, Ella said “ESL teachers can... play a major role... Every teacher and/or instructor has the power to shape and mold his [or] her students’ minds, perspectives, and even personalities.” That being said, some ESL teachers disagreed. Ann perceived sustainability as a standalone subject matter that “is not within the ESL realm.” Batool said “Science, Math and Social Studies teachers can cover such topics.” Jay felt the same way, expressing that it “should be the responsibility of those who are specialized in science or aligned disciplines.” From a non-committal stance, Laila stressed that “what [teachers] need, first and foremost, is the conviction. You can’t expect your students to be excited about something when you are not.”

The second part of this question pertained to their perceptions and observations about what knowledge and skills ESL teachers would need to teach sustainability while teaching English. Both Ann and Fiona indicated they knew already that they did not know enough about ESD to bring about any deep impact on students’ awareness or knowledge. Based on her observations, Helen felt that ESL teachers should at least be energy literate. They need to know about “renewable and non-renewable energy sources [and] have a general understanding of key terms such as solar power and hydropower.”

At the other end of the spectrum, Ella perceived that “[a]part from standard [teaching] skills, any teacher would require, to impart knowledge and understanding, an unbiased and well-formed perspective on the issues surrounding energy and sustainability forms the bedrock of skills required to conduct such a lesson.” To paraphrase Israa’s position, she perceived that ESL teachers are also educators meaning their knowledge base and teaching skills are not restricted to teaching students the English language, but also to help and prepare new generations to become effective community members.

Most (71%, n=10) of the participants' answers to the second part of Question 2 included reference to teaching strategies and materials and class preparation and activities. To illustrate, Mona observed that when ESL teachers are not familiar with the ESD subject matter, it is important that they plan and read about ESD topics, which can show them how to both conduct a sustainability-infused English language lesson and monitor both aspects of students' learning. Laila perceived that "teaching strategies play a significant role in delivering topics to raise students' awareness of sustainability-related issues in the ESL curriculum."

Overall, a participant pointed out that sustainability-related teaching materials and information about relevant class activities are plentiful and readily available to ESL teachers. Ideally, teachers need to combine reading and vocabulary skills with class discussions on the importance of sustainability issues. Gina became so engaged with the question that she actually created and shared in her response a seven-step lesson plan to raise students' awareness of sustainability-related issues in an ESL class.

Question 3: "Why do you think an ESL teacher in a university preparatory program would be asked to help raise students' awareness of these issues through teaching of English? What would be your response to such a request?"

Nearly three-quarters (71%, n=10) of the participants expressed their positivity and willingness to accept such a request. Batool preferred it as "an option" rather than an obligation. The ESL teachers in this study shared multiple reasons for why they thought others would ask them to raise students' awareness of sustainability issues in ESL lessons. Debbie perceived that SA students mainly learn English so they can travel, study and live aboard. She lamented that "[o]nce in the west, their carbon footprint will increase dramatically" justifying being asked to teach them sustainability while teaching English. Ann observed that students in a non-English-speaking country such as Saudi Arabia may not be aware of global sustainability issues, explaining why someone would ask SA-based ESL educators to use ESL to teach about sustainability.

Kate observed that, as citizens, SA students will become responsible for doing the right thing if they have "awareness of and are properly oriented on this issue." For her, this explained why she would embrace being asked to use ESL to teach sustainability. Israa said the main task for any teacher and educator "is to prepare the students to be productive, effective and protective toward their community and Planet Earth as a whole." Noor perceived that university teachers "have the last chance to inculcate the sense of citizenship in their students." ESL teachers especially "have the liberty to talk with their students about various topics in class." She noted that once students graduate from university, they might not have another opportunity for formal education.

Opinions. Two questions focused on soliciting ESL teachers' opinions about using ESL to teach sustainability. Opinions are personal expressions of feelings or thoughts about something that may or may not be fact or evidence-based.

Question 4: "In your *opinion*, how can ESL teachers play a role in raising students' awareness of energy or other sustainability-related issues?"

Overall, participants expressed the opinion that ESL teachers can play a role and half (50%, n=7) of them suggested classroom activities for how they can raise students' awareness of sustainability issues. Without quoting any particular participant, these ideas included: project-based learning, sustainability theme-based documentary videos, critical thinking-based research assignments and presentations, classroom discussions

that create a space for students to express their feelings about sustainability, role playing, and sustainability-informed reading comprehension passages.

The general consensus was that ESL teachers can develop an ESL language curriculum that encompasses local and global energy issues. The most effective way (i.e., how) is to embed and integrate these issues and themes into the ESL curriculum. Following the development of such an ESL curriculum, they suggested that classroom instruction will evolve and classroom activities can be incorporated into the ESL sustainability-themed lessons.

Using a different framing of *how*, some participants felt that ESL teachers can be influencers. To illustrate, Debbie opined that “students take an interest in what the teacher values ... (whether or not they agree with their teacher).” In her opinion, teachers have a responsibility to present important sustainability issues to ESL learners “with honesty and enthusiasm and with information that is well grounded in the best research possible.” Such a strategy would help students appreciate how important sustainability is with the ESL teachers’ tasks being to motivate and help students to develop intrinsic awareness of these issues. One way to do this is to provide authentic, real-life examples. For instance, water wastage and excessive water consumption in SA has exhausted water in the aquifers, which cannot be replenished.

As an outlier, Jay was of the opinion that having expat ESL teachers advocate for sustainability “will be worse than unpopular [in]...a traditional society [like SA].” She was of the mind that success in raising students’ awareness of environmental and sustainability issues would be more likely if the government were to take the lead not ESL teachers.

Question 5: “What are your *opinions* about whether ESL teachers *should* be involved in planning for a language program that raises students’ awareness of energy or other sustainability-related issues?”

This is a normative question intimating obligations and necessity – *should* ESL teachers be involved in planning language programs that contain sustainability? Two participants refrained from expressing an opinion about teachers’ obligations. Ann said “knowledge is the key to improve the standard of living and the future of all.” By this she intimated ESL teachers’ obligation to teach this but refrained from articulating an opinion. Israa was strongly of the opinion that “teachers and students must be fully educated about issues of sustainability” but she did not indicate whether ESL teachers should be the ones teaching these issues. The remaining participants (86%, n=12) expressed positive opinions about ESL teachers’ involvement in planning ESL curricula embedded with sustainability using words such as “should be involved,” “a plus!” and “a great idea.”

In addition to their opinion that ESL teachers *should* be involved in planning language programs that contain sustainability, some participants went further and suggested how this might happen. ESL teachers could be involved in SA universities’ initiatives to plan their ESL curriculum to be taught by expat teachers. Sustainability specialists could be involved in planning the ESL language curriculum thereby ensuring the embeddedness and integration of sustainability-themed issues. Energy issue and sustainability-topic language lessons and activities can be planned ahead of time and shared amongst ESL teachers.

That being said, some participants felt this subject matter would be better planned and taught by teachers who are specialized in it rather than ESL teachers. For example,

Ann was of the opinion that this subject may already “be taught in science subjects: biology, nutrition, geography, etc.” suggesting there is no need for ESL educators to be involved. Ella opined that teachers who are “qualified enough to be involved [perhaps]” (intimating possibility not obligation). Individuals who are “accomplished and well read in the subject matter should also” be included in planning sustainability-related ESL curricula. Debbie thought ESL curriculum should include sustainability issues: “I don’t see a need to have a [university] program solely focused on energy and sustainability.” In contrast, Jay expressed the opinion that “sustainability is already a specialized course for undergraduates in other disciplines” thereby intimating that they do not need exposure to it in ESL language classes.

Beliefs. Two questions focused on ESL teachers’ beliefs about their role in using language classes to teach about sustainability. A belief is something people know, feel or are confident is true; their mind accepts it as true (Anderson, 2014).

Question 6: “What are your *beliefs* about your role as an ESL teacher in raising students’ awareness of energy or other sustainability-related issues?”

The majority (79%, n=11) of participants were positive about their role in teaching language with a sustainability theme. In their words, they believed their role would be: “effective,” “pivotal,” “important,” even “obligatory” and “necessary.” Furthermore, Israa believed it was “everyone’s responsibility to raise students’ awareness of energy or other sustainability-related issues;” this role is not limited “to just ESL teachers,” who do have a role. Kate believed she would “feel great and happy” to play a role in raising sustainability and energy awareness among her preparatory year ESL students. Two participants were skeptical about the role they could play in this regard. As noted before, Ann believed that global concerns are not a focus of ESL lessons and Jay was convinced that an expat ESL teacher could not deliver such lessons effectively in a host country.

Participants collectively believed that their involvement would strongly benefit ESL students. Without naming anyone specifically, ESL teacher participants believed they could: (a) open students’ minds and widen their horizons to individual and global communities and (b) help them to become independent, patriotic and nationalistic on top of developing their metacognition via language learning.

Question 7: “What are your *beliefs* about education for sustainable development (ESD)?”

Without quoting any particular participant, the researchers gleaned several insights into participants’ general beliefs about ESD, which they are being asked to integrate into the English language curriculum. First, ESD is important. A participant believed that Islam holds that it is obligatory to teach students the importance of sustaining lives on earth. Another belief was that ESD for Saudi youth is crucial in these times of fast-changing development/modernization, which is taken place at the expense of KSA’s natural resources.

Second, participants were convinced that ESD serves several key purposes. It teaches Saudi students to live a sustainable life and maintain a healthy planet. More importantly, it serves to imprint an entire Saudi generation with the right attitude and automatic reflexes in dealing with sustainability-related issues. Third, many participants believed that ESD-themed materials and activities can be incorporated in ESL language lessons; ESD holds a key function in students’ learning. Some participants were convinced that embedding ESD into Saudi ESL curricula means the Kingdom would be joining many

other countries that are playing an active role in reducing greenhouse gas emissions and global warming.

Attitudes. An attitude is a positive or negative disposition towards something (De la Sienra et al., 2017). Two questions focused on participants' favorable or negative inclinations towards raising students' awareness of sustainability issues in their language classroom.

Question 8: "What is your *attitude* toward raising students' awareness of energy or sustainability issues?"

Literally all participants (100%) exhibited a positive attitude toward raising students' awareness of sustainability issues. Their language revealed how strongly they felt: "it is excellent," "I strongly approve of it," "it is the need of the hour," "we should do this," and "I am extremely positive about it." Awareness "has to begin in the home as well as within the educational system," Ann remarked. Laila said teachers "should lead by example on this topic." Noor asserted that "everyone must be taught about energy and sustainability issues." Helen had a positive attitude as well but pointed out that sustainability "is still a relatively new topic for the students in the Kingdom."

Question 9: "What would be your first response if you were asked to teach English with a theme of energy and sustainability?"

Asking about their knee-jerk reaction to being asked to teach English language acquisition with a sustainability theme was a roundabout way to discern their attitude. Virtually all (93%, n=13) participants described their first response to this request in a positive manner. One ESL teacher, however, said "not keen." Examples of positive responses include "glad," "happy," "I would appreciate," "I would not hesitate," and "I would be excited."

They further supplemented their positive first responses with the following insights attributed to no one in particular. In Saudi Arabia, an ESL educator can reach more individuals making them aware of these environmental issues and inspire them to get involved. Using the sustainability theme to teach English is not much different from teaching the theme of 'going to the restaurant'. Two participants expressed their need for teaching materials from their institution so they can adequately teach about sustainability *while* teaching English. Helen said that when teaching English using ESD themes, "I would do research ... prepare [and deliver lessons] to the students according to their English proficiency level."

Knowledge. Knowledge is something one knows or understands through complex cognitive processes; knowledge is in the mind while information is outside the mind. Four questions focused on this dimension. Participants were asked if they thought their academic background would have an effect on their teaching an ESD-infused ESL curriculum. After inquiring into their interest in the topic of sustainability, they were asked how knowledgeable they felt about sustainability issues and what they thought an ESD-focused ESL curriculum might look like.

Question 10: "Was your major in arts, science or was it multidisciplinary? How do you think this *academic background* will affect you teaching ESL from a sustainability perspective?"

The majority (67%, n=10) of participants had an arts background, followed by science (25%, n=3) and multidisciplinary (8%, n=1). All of the ESL teacher participants with a science background said they were informed and had a solid foundation for teaching ESD while teaching language. Fiona was the only participant who has a multidis-

ciplinary background. She said: "I have no problem dealing with this subject." Kate, with an arts background, still appreciated that "teachers who possess multidisciplinary knowledge are able to teach students specific topics but at the same time relate them to a broader topic by thematically linking these topics together."

Four teachers with an arts background (40%) expressed some concerns. To illustrate, Gina said "I think it will affect [me] greatly" when teaching ESL from a sustainability perspective. On the other hand, most (60%) of the participants with an arts background said they had found ways to overcome their sustainability knowledge gap. For example, Debbie said "I am able to research different sides of sustainability issues and do not get caught up in rhetorical narratives created by people who have an agenda for putting forward their 'facts'." She uses her critical thinking skills, which are the foundation of any ESL curriculum, in "understanding global issues."

Similarly, although Helen has a Doctorate in Applied Linguistics, she said this arts background "will *not* affect" her teaching ESL from a sustainability perspective. She accepted that "I will certainly have to read up more and to deliver English lessons centered on sustainability." Israa, whose major is English Language and Literature, felt the same as Helen. Laila believed her background in English Literature and Translation enabled her to read more critically and "be aware of different issues, such as sustainability."

Question 11: "As an ESL teacher, are you *interested* in science or global sustainability issues? Explain your answer."

This question assumed that an ESL educators' interest in science and sustainability is associated with them bringing sustainability into the ESL curriculum. All three teachers with a science background said they were interested in scientific and global sustainability issues. Ann explained that "scientific and global sustainability issues are coupled together." Batool pointed out that her interest stems from the fact that "global sustainability issues affect everyone." Ella said her interest reflected her own "educational background, moral and belief system, and overall perspective" more so than formal training in the topic. Laila's interest in sustainability issues was limited to "doing my own share by learning more, passing on the knowledge and the attitude within my family, students, colleagues, and community."

Question 12: "Do you think you have sufficient *knowledge* (and skills) to prepare and teach lessons dealing with energy and sustainability issues?"

Of those who answered this question (n=12), half (50%) said they think they have sufficient knowledge with most clarifying that it is limited to basic understanding of the topic and related issues. They would need to do research, read up and collect data and more details about sustainability for their ESL lessons. One quarter (n=3) of the participants said they did not think they have *enough* knowledge and skills to deliver such lessons saying they would need more ideas, training and research into the topic so they can stay prepared and continue learning. Another three participants (25%) said they do not possess the knowledge and skills needed to teach energy and sustainability issues. Aside from being knowledgeable about it, Ann cautioned that "not every ESL teacher wants to teach about sustainability issues."

Question 13: "What do you think an ESD-focused ESL curriculum would look like?"

So prompted, virtually all participants tendered ideas about what an ESD-focused ESL curriculum would look like. In general, they thought it would be well-structured

(not fragmented) and use scaffolding from K-12, building on what non-university Saudi students have already been exposed to about sustainability and energy issues.

Content-wise, to the best of their knowledge, participants said that an ESD-focused language curriculum would include local and global sustainability issues including pollution, citizens' responsibilities, water consumption and wastage, electricity over-consumption, household recycling, and caring for and maintaining the environment and natural resources. This range of topics are strictly related to the real-life problems in KSA.

Instruction-wise, ESL teachers would use project-based teaching and engaging learning activities (i.e., colorful, vibrant and practical) within the school and community. They would use energy and sustainability-oriented reading comprehension passages. Sustainability would be embedded in and integrated into grammar, vocabulary, writing, listening and speaking exercises. ESL teachers would draw on energy and sustainability-oriented reading materials and texts and documentary videos. Class discussions to practice English would incorporate ESD and energy issues. Preparatory-year Saudi students would be required to conduct sustainability-related research while practicing and learning English.

Values. Two final questions sought to explore whether ESL teachers think it is important (of value) that they personally know how to teach and that students learn about energy and sustainability issues in the ESL university preparatory classroom. If something is of value, it may guide behavior.

Question 14: "Do you think it is *important* that ESL teachers be able to *teach* energy and sustainability issues in university preparatory programs? Explain your answer."

Virtually all (93%; n=13) of the participants thought it was important that ESL teachers be able to teach energy and sustainability issues in university preparatory programs with most sharing reasons why. Some reasons were articulated when answering other questions, so only new contributions are shared here. Noor reaffirmed that although it is important that ESL teachers be able to teach about sustainability, "they must be taught about sustainability issues before they can teach about them."

Being able to teach about sustainability and energy is important because ESL teachers' efforts can socialize students to the pressing issues of our time. Israa suggested that teaching sustainability in ESL classes "lays a foundation for those students who are willing to major in related courses *after* they complete their journey in the preparatory year." Laila agreed claiming that teaching sustainability "will help students to learn early on that they have control of our individual actions and habits that collectively have an impact that may even surpass their expectations." Gina concurred noting that "it will bring about significant impacts on the future decisions of the learner." Kate said it is important that ESL teachers know how to teach about sustainability because "it is a global issue that transcends borders, beliefs, or nationalities."

Question 15: "Do you think it is *important* that ESL *students* learn about energy and sustainability issues as they learn the English language? Explain your answer."

This question focused on whether ESL teachers think university preparatory ESL students gain value from learning about sustainability as they learn to speak English. When answering this final question, most participants reiterated points previously made in other questions – a data characteristic that signals the research probe was exhaustive (i.e., data saturation, Creswell, 2009). Over three-quarters (80%) of study participants said that this was of value and important. Jay argued instead that the focus of ESL lessons is to speak a second language not to learn about sustainability.

Fiona felt it was important (of value) because “sustainability is about making sure that students understand that development must not compromise our natural resources in order for our next generation to have something to live on.” Laila saw value because “preparatory year students are on the verge of embarking on a new stage of their lives. What they experience, learn, or get exposed to at this stage may have a huge impact on their future behavior patterns. They are the future of their families, communities, countries and the world at large.” Israa concurred by maintaining that all students “should learn about all the global issues that might challenge them after they leave college. That is, students must be equipped with the kind of knowledge they can apply in their everyday life.”

Thinking along broader horizons, Kate said that ESL students were to “apply the value of appreciating the world that they live in” and Gina said that ESL students learning about sustainability is valuable because they are “the future of a country.” University preparatory students will be prompted “to make minor changes and take steps for the betterment of an environment they live in, it quickly leads to behavioral changes which last long and the outcomes are excellent putting forward valuable students and citizens.” Succinctly, Fiona believed that learning about sustainability was as important as learning a language “since sustainability is relevant to everyone’s life and survival.” She further said that it was “about making sure that [students] understand that development must not compromise our natural resources in order for our next generation to have something to live on.” Envisioning some SA university students living and working abroad after they graduate, Debbie commented that what they learn about sustainable living “would be valuable for Western countries and thus for the world as a whole.”

Conclusion and Implications

With respect to the intent of this study, data analysis and interpretation lead to the emergence of an inaugural profile of ESL teachers’ thoughts about teaching sustainability and energy issues while teaching English to university preparatory-year Saudi students.

Inaugural ESL Teacher Profile

SA ESL teachers perceived that (a) it would be valuable to use ESL to teach sustainability to university preparatory-year Saudi students, (b) ESL teachers can play a role in teaching sustainability and (c) there are many reasons why they would be asked to do so and they would be receptive if asked. As Zygmunt (2016) asserted, students (i.e., language users) need to learn the language and the socio-cultural aspects in order to communicate sustainability effectively. Participants were of the general opinion that ESL teachers can and should be involved in planning for and teaching about energy issues and sustainability. The majority of participants believed that using language lessons to teach sustainability would be effective and important and it would especially benefit ESL students by widening their horizons as well as developing their metacognition. They believed ESD is important especially in oil-dependent Saudi Arabia with all its implications.

Virtually all participants had very positive *attitudes* about raising preparatory-year students’ awareness of sustainability issues in their language classroom and using ESL to do so. Regarding *knowledge*, science and multidisciplinary participants felt confi-

dent teaching an ESD-infused ESL curriculum while those with arts backgrounds were mixed. Interest varied as well, with some very and others not interested at all in the topic of sustainability. Only half felt knowledgeable enough about sustainability and energy issues but almost all had viable suggestions for what they thought an ESD-focused ESL curriculum might look like. Besides, Bell (2016) pointed out that ESD is “transformational”; therefore, the teacher no longer needs to function as ‘the transmitter’ of knowledge. Rather, he or she is a facilitator of students’ learning. Most saw value both in ESL teachers being able to teach and students learning about sustainability with more (93%) participants valuing teachers knowing how to teach than students learning about sustainability (79%).

This inaugural profile augments several insights from the literature. ESL lessons enriched with sustainability-related content are “an excellent medium for language learning” (Nashat, 2011, p. 40). “Fusing environmental education with language acquisition can elevate students’ interest in current issues that could directly influence their futures” (Young, 2016, p. 8). Both of these sentiments pervaded this data set; teachers, students, the Saudi nation, future generations and the Earth were all perceived to benefit.

Furthermore, since it is uncommon to infuse sustainability into ESL lessons (Nanni et al., 2015), the study participants still tendered rich insights into what such a curriculum would look like (matching those suggested by Jacobs and Cates (1999) for global education and Young (2016) for environmental education, both in ESL classes). Other nations’ success with using ESL to teach sustainability (Nanni et al., 2015; Nashat, 2011; Nkwetisama, 2011) bodes well for Saudi Arabia, especially when bolstered by the findings from this inaugural study. If our findings are any indication, it is safe to conclude that ESL teachers working at Saudi universities (at least in the Eastern Provinces) will be receptive to being asked to use the ESL curriculum to teach sustainability in the preparatory year.

Those universities that decide to redirect resources towards developing instructional materials and in-servicing as suggested by UNESCO (2005) and requested by study participants will need to respect three key findings. First, participants wanted to be involved in developing this curriculum. They tendered many valuable pedagogical contributions. Second, many ESL teachers did not feel knowledgeable enough to bring sustainability into their ESL lessons despite seeing value in the exercise (see also Mezhar et al., 2011). Third, ESL teachers with an arts background who felt less-than-confident engaging in this approach were inclined to take steps to address their knowledge gap, meaning they will likely avail themselves of institutional resources and support materials. As a caveat, these materials must simultaneously prepare ESL teachers to teach English and teach them about sustainable and energy issues (Nkwetisama, 2011).

SA higher education ESL programs should build on the value that study participants saw in teachers knowing and students learning about sustainability. That being said, findings revealed that ESL teachers’ interest in the very topic of sustainability varied so initiatives designed to entice them to use their language lessons to teach sustainability should remain cognizant of this outcome. Lack of interest may mean lack of uptake. It is hard for people to have an interest in something they do not have (e.g., knowledge of sustainability) (McDougall, 1923). A minority of participants thought that (a) ESL should be used only to teach English and (b) expat ESL teachers are not in a position to teach sustainability in Saudi Arabia. This qualitative study precludes suggesting how pervasive these points of view are in the SA ESL community but they did emerge as findings.

Bottom line ... the earth is in crisis and Saudi Arabia is a major oil producer (inadvertently contributing to CO₂ emissions) with education the key to addressing attendant pressing issues (United Nations, 2015). Very recent research has substantiated that Saudi university preparatory students are not energy literate (Alghamdi & El-Hassan, in press). It is imperative that Saudi ESL curriculum designers and higher education administrators involved with the preparatory level program consider using ESL to teach sustainability.

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