Perceptions of Curricula and Methods of Teaching English Experts towards Sustainable Education and Curriculum Development for Specific Purposes

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Abstract

This paper aimed at investigating the perceptions of EFL faculty members towards sustainable education and curriculum development for specific purposes. The descriptive method with quantitative and qualitative approach was used to achieve the objectives of the study. The sample of the study was purposefully selected as a random sample from the experts of curricula and methods of teaching English at Yemeni Universities. To collect data, the study used a five-point Likert scale questionnaire as close and open-ended questions that was distributed upon the experts of curricula and methods of teaching English at Yemeni Universities with a number of (30) member to identify their perceptions towards sustainable education and curriculum development for specific purposes. The obtained data were tabulated and analyzed using the Statistical Package for Social Sciences (SPSS) version (24) by means of descriptive statistics (means, standard deviation, mean ranks, and sum ranks). The obtained data are also tabulated and analyzed using the inferential statistics (Non-parametric Statistics; ONE WAY ANOVA) to examine if there were any statistical

significant differences between the mean ranks of the sample responses regarding the variables of academic rank, years of experience, and the university. The results of the study depicted that the experts of curricula and methods of teaching English believe that the goals of sustainable development should be included in the curricula for sustainable education. The results presented that the perceptions of the experts of curricula and methods of teaching English at Yemeni Universities towards sustainable education and towards curriculum development were highly positive indicating to a significant relationship between curriculum development and sustainable education. The results also proved that there were no any statistical significant differences in the scores of the sample members' responses regarding the variables of academic rank, years of experience, and university. The study presented some important recommendations as follows: Incorporating the topics of sustainable education such as major nature, environmental awareness, global citizen values, as well as students' levels of self- norms, beliefs, and values when designing courses specifications for better learning and teaching process as well as for better career and life. Examining the relationship between the adoption of sustainable technology for educational efficacy and sustainable education. Shedding light on forthcoming curriculum development efforts at faculties and universities, providing opportunities and administrative actions to support sustainable education and sustainable educational environments.

Keywords: Perceptions, Experts, Sustainable Education, Curriculum Development

Introduction

Human and environmental development as target goals around the globe is considered the most important factor to adapt effectively with its rapid changes that influence many areas belong to educational, social, environmental and economic life in the current era. This leads education becomes an essential requirement for the targeted sustainable advancement for formal and informal education levels as an ongoing task in life-long learning programs. This

why sustainable education has been given an important position by the United Nations. Likewise, because of the enormous significance of English as Franca language, which has countless benefits, the inclusion of sustainability concepts in English curriculum becomes an essential aspect to be achieved in today's world. In addition, global changes and technology advancements with the help of English language also boost a vital role as the master key for successful and sustainable lifetime. Several reasons lead curriculum developers to focus on sustainable education to participate in facing severe environmental changes such as the hazards of global warming, the shortage of natural resources and the loss of biodiversity. In addition, wars and the threat by terrorism have spread and as well as the risks and crises of the financial systems are political, economic, social and ecological challenges around the world should be taken into account when developing curriculum. When it comes to the dimensions of global poverty or increasing restriction of political rights and civil liberties, they would not be decreased away from sustainability and development. Accordingly, sustainable education and curriculum development are emerging concepts in this paper that can be taken in multiple directions providing the literature with ideas of sustainable and development.As a result, this paper aims at investigating the perceptions of the experts towards sustainable education and curriculum development for specific purposes. Similarly, it enables curriculum developers to consider the core that takes time and extra efforts toward achieving sustainable education. To sum up, curriculum development represents the backbone of educational process that qualifies learners to sustain core abilities and experiences for better life. Consequently, the related literature reviewed and found that focusing on developing curriculum for specific purposes towards sustainability in light of the perceptions of EFL faculty members is considered more noteworthy topic. Based on this rationale, a strong desire to seize the opportunity of conducting this paper to bridge the gap in

literature as a more significant task towards global sustainability and development for changing generations' perspective and empathy to see themselves as citizens of one world.

Literature Review

This paper stands on sustainability theory shedding light on related literature of both local and international requirements particularly on sustainable education and curriculum development. Because of many international articles introduced calls for educational institutions to address sustainability matters, education for sustainable development and education for sustainability took place and started to emerge in the literature as a result (UNESCO, 2006). Considering the findings and recommendations of latest previous studies, limitations and some gaps are found such as overcoming the implications and negative consequences prevailing towards integrating sustainability concepts with higher education and the like. The most important gap found is the necessity for increasing awareness of the problems caused by a very dynamic globalization – of ecological challenges, poverty and human rights violations. Generally, educational process should focus on a guiding principle with four target dimensions of development as economic performance, social justice, environmental compatibility and appropriate governance to provide orientation for responsible evaluation making decision and practice. That means the education and learning process should consequently align their concepts towards sustainability and development. However, due to lack of developing sustainable curriculum, several challenges face teaching and learning process in terms of objectives, content, activities and evaluation in which this paper seeks to find solutions to such problem to adapt sustainable education.

According to Sterling (1996), education for sustainabilityaddressed several challenges in achieving sustainability such as examining and clarifying its meaning, offering a critique of education for un-sustainability, explaining the philosophical foundations and issues

underlying desired change in educational theory and practice, proposing alternative pedagogical, curriculum, and structural modes.

While Timmerman and Metcalfe (2009) argued that universities are usually less successful in their attempts to implement sustainability on the pedagogical level than in their attempts to achieve it on the campus operations' level, such as energy saving, changing the scope of the course to reinforce education for sustainability development teaching strategies was recommended as well (Mansour et al, 2014). Whereas, Qablan et al (2009) tackled mainly academics in the field of environmental sciences, indicating moderate and favorable attitudes towards sustainable education recommending worth considering for further research in the area of education sustainable development among tutors. As well as Hopkinson and James (2010) demonstrated that educational efficiency has a major effect on education that can be maintained over time. In addition, there was a strong and positive mediation effect of the adoption of sustainable technology on the relationship between educational efficacy and sustainable education.

Because of the global and interconnected nature of sustainable development concept, sustainability education requires the spread of both linguistic and cultural understanding to deal with the complicated issues of sustainable development. Therefore, curriculum developers should provide examples of applying pedagogies with different forms including slight modifications to the original curriculum, which offers, for example, lectures about sustainable topics occasionally based on an environmental issue (Hopkinson and James, 2010; Hubscher-Davidson &Panichelli-Batalla, 2016; and Ter Horst & Pearce, 2010).

UNESCO (2014, p1) reports that education is a right that transforms lives when it is reachable to anyone, relevant and strengthened by core-shared values. While the quality of education is the most central force for relieving poverty, supplying health care, increasing

prosperity and shaping more inclusive, peaceful and sustainable communities, it is also in everyone's interest to ensure that it is at the focal point of the development agenda.

Recently, the pressure found on natural resources caused not only environmental challenge, such as climate change but also social, political and economic challenges embodied in extreme poverty and prevailing inequality. Such concerns on the planet's limited resources lead to necessity for developing individuals' better quality of life, which would not be achieved away from sustainable education (Sachs, 2015). Accordingly, El-Awamri (2015) proposed graduate programs at higher education to enhance and evaluate individuals' sustainability literacy particularly by taking the sustainability literacy test, which was developed by the higher education sustainability initiative.

In terms of the incorporation of sustainability and development matters in education, some studies confirmed that when developing curriculum at higher stages particularly that EFL faculty members should have a vivid image of sustainable education and its objectives, topics and requirements to be integrated (Coral, 2009; Cotton, et al., 2007; Evans, Ferreira, Davis & Stevenson, 2016). Based on that, teachers showed high perceptions in the concept of sustainable development and its related issues particularly in cultural diversity, renewable energy and equity (Ambusaidi& Al Washahi 2016). Sachs (2015) confirmed that sustainable development should focus less on intergenerational needs and more on the holistic approach linking economic development, social inclusion, and environmental sustainability. Whereas Chita et al (2016) determined the gaps and needs that should be addressed in courses offered by Greek universities emphasizing the value and need for competences on sustainable development to foster the educational and societal transformation towards sustainability.

Based on Anthoula et al (2019), most students had never taken sustainable educational lessons during their formal education as well as most of teachers had knowledge on environmental aspects but did not consider social and financial matters to be aspects of

sustainable education. Hence, experts believe education for sustainable development is an important issue for the education, and it should be included in the curricula worldwide to offer knowledge, skills, attitudes and necessary values for humanity sustainable future.

From 2005 to 2014, it is known as the decade of education for sustainable development, which was an initiative by the United Nations to support education for sustainable development worldwide, followed by the Agenda 2030. After the United Nations had launched such decade, sustainable education has been observed as an important factor in shifting individuals' behaviors and attitudes towards creating and preserving more sustainable environments and communities (Andersson, 2017).

Since that, many countries declared adopting sustainable development in their development agenda covering some issues providing present and future generations with sustainable supplies such as supply of clean water, food and energy, and the like toward the target sustainable academic programs at universities (Abozaied, 2018). However, sustainability and development concepts are still not completely formed by individuals in which that leads to clarify what is meant by the terms and their potential for bringing effective awareness and change among societies. Such area should begin with investigating experts' perceptions as reported in literature that lack sustainability awareness among the Arab countries. In higher education in particular, more in-depth research is increasingly needed in the area of exploring experts' perceptions towards sustainable education, sustainability and development (Abozaied, 2018; Biasutti, Makrakis, &Frate, 2018; El-Awamri, 2015; EL-Deghaidy, 2012; and Timmerman & Metcalfe, 2009).

Universities are widely perceived as the institutions responsible about qualifying graduates for future careers to face social, economic and environmental challenges that face and future generations. In addition, they have a moral obligation towards incorporating sustainability in education. Accordingly, universities have already integrated sustainability

concepts in their teaching curricular as well as most attention has been given to technical pedagogy. To consider the postgraduate levels, a majority of sustainability concepts has been integrated at some faculties teaching curricular from Bachelor to PhD levels showing the importance of sustainability concepts in the higher education system providing a positive perception of such incorporation (AnupamaGunawardana et al 2020; Cotton, et al., 2007; and Butt, 2016).

Sezen-Gültekin and Argon (2022) mentioned some barriers on educational sustainability based on the teachers' perception as follows: continuity, order, executive action, resilience, and goal orientation. As well as the education policies, stakeholders, management style, environment, and change were barriers to educational sustainability. To reduce these barriers, education system, improvement of administrative processes, building a future-oriented structure, increasing quality, breaking the influence of politics in education, following the developments and considering common values should be carried out. On the contrary, educational policies, generating opportunities, and administrative actions were mentioned as facilitators and practices to increase these facilitators for educational sustainability.

The curriculum framework for education for sustainable development is funding the acquisition of respective competencies in as many subjects as possible to comprehend sustainability at schools and universities' classes and administrations. Therefore, curriculum development should affect the sustainability in education to enable schools and universities to become more sustainable, educate in ways that sustain students for a sustainable world over their lifetimes (UNESCO, 2022, p. 14).

Based on the literature reviewed, all of them agreed with the researchers' perception in conducting this paper on such important topic and in such important area as well. Some studies revealed a significant relationship between educational effectiveness and sustainable

education, addressed the integration of the sustainable development goals in English language and literature teaching and stressed on the approval to take initiative to gain meaningful learning. The conclusions demonstrated that educational efficiency has a major effect on education that can be maintained over time. As well as a strong and positive mediation effect of the adoption of sustainable technology found on the relationship between educational efficacy and sustainable education (Abozaied, 2018; AnupamaGunawardana et al, 2020; Coral, 2009; Cordova, 2024; Cotton, et al., 2007; Evans, Ferreira, Davis & Stevenson, 2016; Hopkinson and James, 2010; Kuram, 2023; and Qablan, et al 2009).

All the previous studies went in line with this paper highlighting the possibility of sustainability integration in education and in language teaching curriculum to engage students in the global discussions about achieving the sustainable development goals. In light of the findings of previous studies reviewed, it was clear that more focus was on investigating experts' perceptions towards sustainable education in terms of educational, environmental, social, and economic issues such as ending extreme poverty, renewable energy, protecting future generations, waste management, cultural diversity, human population growth, protecting natural resources, increasing economic growth, and controlling climate change. Regarding the development, some previous studies also aimed to focus on sustainability particularly in curriculum such as (Abozaied, 2018; AnupamaGunawardana et al, 2020; Coral, 2009; Cordova, 2024; Cotton, et al., 2007; Evans, Ferreira, Davis & Stevenson, 2016; Hopkinson and James, 2010; Kuram, 2023; and Qablan, et al 2009).

As mentioned earlier, all these previous studies gave this topic more supportand went in line with this paper emphasizing the significance of sustainable education and curriculum development. For example, in terms of place limitations, most of them limited on universities such as (Abozaied, 2018; Anthoula, et al 2019;Anupama, 2020; Chita, et al 2016; and Qablan, et al 2009). Regarding the instruments used, most of those studies also used

questionnaires as the same instrument as this paper used (Ambusaidi& Al Washahi. 2016; Anthoula, et al 2019;Anupama, 2020 and Qablan, et al 2009). With regard to the sampling, some of them focused on English departments at universities similar to this paper to explore faculty members' perceptions (Abozaied, 2018; Chita, et al 2016 and Qablan, et al 2009).

However, this paper showed a contrast to Mansour et al (2014), which dealt with teachers' perceptions towards sustainable development for the education at school. In addition, the current paper differed with some of those previous studies in terms of using the quantitative method as found in Abozaied (2018) that used qualitative research design because of its interview tool as well. On the other hand,Astawa et al (2023) identified the trend of associating sustainable development goals with EFL students to improve their learning to solve urgent issues faced by global society showing that EFL students' learning achievement, environmental awareness, global citizen values, as well as their levels of self-norms, beliefs, and self-value were enhanced. Whereas, this paper conducted to investigate the EFL faculty members' perceptions towards sustainable education and curriculum development for specific purposes such as protecting future generations by sustaining natural resources and renewable energy, increasing individuals' economic growth, and controlling climate change etc. Similarly, Mansour et al (2014) constructed the concepts of sustainability and development in a way that more emphasis on their environmental perspective; however, the social, cultural and economic perspectives were added too.However, the current paper differed with this latest mentioned study in sampling and number of participants, place and time, method or design and the statistical techniques used. In conclusion, these results added validity of previous studies investigating similar aspects as mentioned earlier such as (Abozaied, 2018; AnupamaGunawardana et al, 2020; Coral, 2009; Cordova, 2024; Cotton, et al., 2007; Evans, Ferreira, Davis & Stevenson, 2016; Hopkinson and James, 2010; Kuram, 2023; and Qablan, et al 2009).

Statement of the Problem

Albert Einstein once said, "It is not very essential for an individual to learn a fact. For that, a student does not need to join a university because s/he can learn it from textbooks. In addition, the true value of education is not in the learning of the fact but in the training of the mind to think about the things that cannot be learned from textbooks." Therefore, joining school stages in educational system is not enough anymore because it cannot provide enough experience in terms of individuals' ability to communicate, work with others, solve problems, or get things done and the like. It means that students learned many things at school or university, which they have never used or would never use in life.

In addition, when students learn facts, they may forget some of them, but when they learn a skill, it still sustainable forever. By the time of school educational system finish, the speed of change in the society occur, and another part seems just as irrelevant information. In other words, a huge part of what learned at schools is forgotten, and another part there becomes obsolete.As a result, schools mostly change to knowledge-based system, in which schools evaluate students' ability to remember not their ability to learn.

On the other hand, a huge part of education cannot be maintained because schools have elements of skills in curriculum, but they are not enough integrated in the educational system. Since a global rising youth on employment is found, some employers argue that many graduate students cannot fill their entry-level positions because of their lack of skill. Meanwhile, it indicates that schools are discordant with the needs of the job market, so that leads to a skill crisis and reflects on the job crisis. Therefore, to get everything sustainable in educational process, curriculum development becomes more essential. Hence, curriculum developers are responsible for helping students to receive the best education concerning over future generations, and universities are also accountable to provide students with the best education as well.

Due to this rationale, the necessity of achieving sustainable education and curriculum development raised and valued conducting this important topic as a result. In brief, being unaware of such problem is considered a phenomenon that needs a scientific investigation to find a vital solution for it. Therefore, this paper seeks to seize an opportunity to achieve the targeted objectives.

This paper conducted to achieve the following objectives:

1. Investigating the perceptions of experts towards sustainable education and curriculum development for specific purposes.
2. Examining if there are any significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education and curriculum development
3. Examining if there are any significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education and curriculum development regarding the variables of academic rank, years of experience, and university.

Methodology

As mentioned earlier, this paper aims at investigating the perceptions of the experts towards sustainable education and curriculum development for specific purposes. To achieve the objectives of this paper, the descriptive method with quantitative and qualitative approach is used. The study sample is purposefully selected as a random sample from the faculty members of curricula and methods of teaching English at Yemeni Universities. To collect data, the study uses a five-point Likert scale questionnaire as close-ended responses that are electronically distributed upon the sample to investigate their perceptions towards sustainable education and curriculum development for specific purposes. The data collection procedures and the statistical techniques and processes are described.

Questions of the Paper

The questions of this paper are as follows:

1. What are the perceptions of the experts towards sustainable education and curriculum development?
2. Are there any significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education, curriculum development, and sustainability and development?
3. Are there any significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education, curriculum development, and sustainability and development according to variables (academic rank, years of experience, and university)?

Hypotheses of the Paper

1. The experts' perceptions towards sustainable education and curriculum development are highly positive.
2. There are significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education, curriculum development, and sustainability and development.
3. There are significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education, curriculum development, and sustainability and development according to variables (academic rank, years of experience, and university).

Limitations of the Paper

The study is limited to the following:

Topical Limitations

Investigating the perceptions of the experts towards sustainable education and curriculum development for specific purposes.

Human Limitations

Taking the curricular and methods of teaching English faculty members at universities.

Place Limitations

Yemeni English language experts at (Sana'a, Ibb as public universities and Al-Andalus, Al-Hekmah, and Al-Qalam as private universities).

Time Limitations

The academic year of 2024

The Results of the Close-ended Questions in the Questionnaire

This part presented the most important results obtained in this paper based on its objectives.

Results Related to Experts' Perceptions towards Sustainable Education and Curriculum Development

What are the perceptions of experts towards sustainable education and curriculum development?

To have a better understanding of the experts' perceptions about sustainable education and curriculum development for specific purposes, a five-Likert scale questionnaire was prepared involving (24) items of three categories. The first category was related to the experts' perceptions towards sustainable education with (7) items. The second category dealt with the experts' perceptions towards curriculum development including (11) items. As well as the third category dealt with the experts' perceptions towards sustainability and development with a number of (6) items.

The instrument was shared as an electronic questionnaire to the experts at Yemeni universities to investigate their perceptions towards sustainable education and curriculum development for specific purposes, and a number of (30) response was received within three

weeks. For statistical analysis, the responses of the experts were coded and analyzed using (SPSS) including mean and standard deviation. For instance, the close-ended questionnaire included (24) items, which they were structured based on a 5-point Likert scale from (1 to 5), in which (5) represented "strongly satisfied", (4) stood for "satisfied", (3) for "neutral", (2) for "dissatisfied" and (1) stood for "strongly dissatisfied".

It was very important to specify the criteriathat used to present and discuss the results of the experts' perceptions in the questionnaire used. For interpretation, mean scores (1-1.80) were considered to reflect highly negativeperceptions, (1.81- 2.60) to reflect negative perceptions, (2.61 - 3.40) to reflect neutralperceptions, (3.41 - 4.20) to reflect positive perceptions and (4.21-5) were considered to reflect highly positive perceptions.

The results showed that the total means of the experts' perceptions with number of (30) faculty members in the first and the second categories were highly positive. In terms of the third category, the total mean of the experts' perceptions was positive. Hence, each one of these categories was discussed separately.

Experts' Perceptions towards Sustainable Education

No.	Items	Mean	Std. D.	Rank	Perception
1	Varying creative teaching and learning strategies leads to sustainable education.	4.67	0.61	2	Highly Positive
2	Sustainable education motivates students to read a number of extracurricular books.	4.33	0.71	5	Highly Positive
3	Sustainable education provides students with a range of practical and flexible skills.	4.63	0.49	3	Highly Positive
4	Sustainable education is not limited on time or place, but it extends to individuals' future life.	4.67	0.55	1	Highly Positive
5	Sustainable education provides individuals with valuable feedback of learning by doing.	4.53	0.50	4	Highly Positive
6	Based on "every action has a reaction," sustainable	4.00	0.98	7	Positive

No.	Items	Mean	Std. D.	Rank	Perception
	education becomes important to face global warming.				
7	Individuals' concepts about energy, economy, infrastructure, and education in particular should be sustainable.	4.00	0.79	6	Positive
	30	4.40	0.42		Highly Positive

This table showed that the means of the first category of the experts' perceptions towards the sustainable education ranged from (4.67) to (4.33). The total mean of this category was (4.40) and standard deviation was (Std. D. = 0.42) indicating to that the experts had highly positive attitudes towards sustainable education.

At the level of each item of this category, this table revealed results as follows:

- The experts' perceptions towards sustainable education were highly positive in (5 of 7) items and positive in (2 of 7) items.
- The highest rank went to the item "Varying creative teaching and learning strategies leads to sustainable education." with mean of (4.67) and standard deviation of (Std. D. =.0.55).
- The lowest rank went to the item (Based on "every action has a reaction," sustainable education becomes important) with a mean of (4.00) and standard deviation of (0.98).

With reference to the table of this category, the experts gave highly positive perceptions in (5) out of (7) items towards sustainable education. The numbers of these items were (4), (1), (3), (5), and (2). The means of these six items received (4.33), (4.53), (4.63), (4.67), and (4.67) respectively.

Experts' Perceptions towards Curriculum Development

No.	Items	Mean	Std. D.	Rank	Perception
1	Curriculum development should focus on student-centered learning design.	4.53	0.73	4	Highly Positive
2	Curriculum development should focus on sustainable topics more than on long classical topics.	4.57	0.57	3	Highly Positive
3	Curriculum development should encourage students how to think, more than what to think should.	4.67	0.48	1	Highly Positive
4	Curriculum development should highlight sustainable values such as unity, peace, etc.	4.37	0.77	9	Highly Positive
5	Sustainable extra-curricular activities provides competitive climate among whole institutions.	3.93	0.79	10	Positive
6	Curriculum development should attempt to find solutions for learning and life challenges.	4.40	0.56	7	Highly Positive
7	Curriculum development should connect between knowledge and practice among students.	4.60	0.62	2	Highly Positive
8	Curriculum development should incorporate topics for a sustainable virtual environment.	4.40	0.50	6	Highly Positive
9	Curriculum development should include sustainable activities to stimulate students' creativity.	4.47	0.63	5	Highly Positive
10	Curriculum developers should utilize artificial intelligence to create sustainable educational software.	3.93	1.17	11	Positive
11	Conducting workshops, seminars and conferences for sustainability effectively contributes to the assessment and development of curricula.	4.37	0.67	8	Highly Positive
Total	30	4.38	0.42		Highly Positive

This table showed that the means of the second category of the experts' perceptions towards curriculum development ranged from (4.67) to (3.93). The total mean of this category was (4.38) and standard deviation was (Std. D. = 0.42) indicating to that the experts had highly positive attitudes towards curriculum development.

At the level of each item of this category, this table revealed results as follows:

- The experts' perceptions towards curriculum development were highly positive in (9 of 11) items and positive in (4 of 11) items.
- The highest rank went to the items "Curriculum development should encourage students how to think, more than what to think should" with mean of (4.67) and standard deviation of (Std. D. =0.48).
- The lowest rank went to the items "Curriculum developers should utilize artificial intelligence to create sustainable educational software" with a mean of (3.93) and standard deviation of (1.17).

With reference to this table, the experts gave highly positive perceptions in (9) out of (11) items towards curriculum development as mentioned earlier. The numbers of these items were (3), (7), (2), (1), (9), (8), (6), (11) and (4) in which the means of these seven items received (4.40), (4.40), (4.47), (4.53), (4.57), (4.63) and (4.67) respectively.

Experts' Perceptions towards Sustainability and Development

No.	Items	Mean	Std. D.	Rank	Perception
1	Sustainability and development are valuable to offer quality of life for everyone.	4.17	0.75	3	Positive
2	Sustainability and development should match social, educational, environmental and economic areas.	4.37	0.67	1	Highly Positive
3	In times of rising global challenges, Sustainability becomes the foundation for development.	4.00	0.79	5	Positive

No.	Items	Mean	Std. D.	Rank	Perception
4	Wars and conflicts around the planet would not be turned into safe and peace without sustainability and development.	3.93	1.20	6	Positive
5	It is important for anyone to sustain thoughts and actions related to sustainability and development as daily activity.	4.03	0.89	4	Positive
6	I support announcing sustainability at universities visions and in their strategic plans and their educational programs as well.	4.20	1.06	2	Positive
Total	30	4.12	0.75		Positive

It also was clear from the table that the means of the category of sustainability and development ranged from (4.37) to (3.93) and the total mean of this category was (4.12) and standard deviation was (Std. D. = 0.75). These results indicated to that the expert gave positive perceptions towards sustainability and development.

At the level of each item of this category, this table revealed results as follows:

- The experts' perceptions towards sustainability and development were highly positive in (1) of (6) items and positive in (5) of (6) items.
- The highest rank in this category went to the item "Sustainability and development should match social, educational, environmental and economic areas" with mean of (4.37) and standard deviation of (Std. D. = 0.67).
- The lowest rank went to the items "Wars and conflicts around the planet would not be turned into safe and peace without sustainability and development" with mean of (3.93) and standard deviation of (1.20).
- With reference to this table, the experts had positive perceptions in (5) out of (6) items towards sustainability and development category. The numbers of these five items were

(6), (1), (5), (3), and (2) with means of (3.93), (4.00), (4.03), (4.17), and (4.20) respectively. Regarding the item that got highly positive perception, it also reached the highest rank in this category with mean of (4.37) and standard deviation of (Std. D. = 0.67).

Generally, the items that got highly positive perceptions were (5 of 7) items in the first category, (9 of 11) items in the second category and (1 of 6) items in the third category. In terms of the items that got positive perceptions, they were (2 of 7) items in the first category, (2 of 11) items in the second category and (5 of 6) items in the third category. These results emphasized that majority of the experts' perceptions was highly positive towards the sustainable education and curriculum development categories and positive in sustainability and development category. Regarding the items that got highly positive perceptions in the three categories as a whole, they were (15 of 24) items. Regarding the items that got positive perceptions in the three categories as well, they were (9 of 24) items.

It was clear that these results confirmed that the experts expressed their interest and motivation in sustainable education and curriculum development and highlighted the beauty of sustainability as a useful and essential factor to path the way particularly in education to reach development process everywhere.

Overall, the experts' perceptions towards the item of "Varying creative teaching and learning strategies leads to sustainable education" tended to be the most highly positive rank among the items as a whole in which experts implied their acceptance of its significance value unlike regular and traditional classes where students used to keep up with a specific teaching and learning style. Undoubtedly, such findings revealed the quality of using sustainable techniques and strategies for attracting students to reach sustainable education. Some interesting reasons such as involving various aspects in the whole items related to the concepts of sustainability and their reflection on educational, environment, social and

economic areas played vital roles in nurturing the experts giving strongly satisfaction kind of perceptions.

These findings pointed out that despite unawareness of sustainability concept and practice among society particularly in education and development, this paper took place among the faculty members at Yemeni universities showing highly positive perceptions. These findings also supported that such items with regard to sustainability combined the experts' ideas with their experience to bridge the gap found in curriculum including sustainable concepts and aspects to reflect that at schools and universities locally and globally. With reference to supporting these targeted objectives, another positive aspect about the experiment revealed that the experts' perception towards sustainable education and curriculum was also appreciated as shown in the item "I support announcing sustainability at universities visions and in their strategic plans and their educational programs as well", which got a positive perception.

The Open-ended Questions in the Questionnaire

What is your background about sustainable education and curriculum development?

The first open-ended question in the questionnaire investigated the experts' familiarity with about sustainable education and curriculum development. All of the faculty members reported that they have background about sustainable education, and most of them added that they were familiar with the concept of sustainable education and its strong relationship with sustainability for development, hence, related concepts can be incorporated in curriculum easily. A number of (25) member stated with clear understanding of the concept of sustainability and development. This number was an evidence to the necessity for curriculum development at university level. For example, some experts believed that sustainability pedagogical practices can successfully incorporated in curriculum only when sustainability concept is considered at universities particularly in their strategic plans and visions. On

contrary, among them some believed that involving sustainability concepts in curriculum was difficult to achieve, but considering level of cooperation between educators and educational and governmental policies could facilitate such targeted task. Others also stressed that this kind of change in policies is important to ensure long-term implementation of sustainability. Others confirmed that surrounding sustainability in isolation from the universities policies, plans and programs, would not lead to include sustainability in education and in curriculum as well. It indicated that all of them confirmed that sustainability should take place at universities for sustainable education and for future development.

Which topics do you think the curriculum development should cover?

In the second open-ended question in the questionnaire, when asked about issues that curriculum development, as it should cover, a number of (20) member nominated more than one environmental issue in which it was more than the social and economic issues. For instance, the top issues with a number of (12 responses) incorporated protecting natural resources, waste management (10 responses), renewable energy (5 responses) and controlling climate change (5 responses). In terms of the second most frequently issue, it was the social issues. To be more specific, the social dimension was mentioned by a number of (18) member particularly such as protecting future generations which took most of the reactions with (8 responses) followed by ending extreme poverty (6 selections), cultural diversity (3 responses). As for the economic dimension, a number of (5) of the faculty members indicated to one or more economic dilemma as areas that curriculum development should cover. With regard to the issue of increasing economic growth, it was also mentioned by a number of (5) members followed by human population growth (7 responses).

Based on these results, the data from the open-ended questionnaire can be used for curriculum development to suite the level of knowledge for sustainable education. As for the three categories, the faculty members agreed with the integration of sustainable education,

curriculum development, and sustainability and development as well as incorporation the dimensions of environmental, social and economic in education and the courses they teach for sustainability and development. The results showed that the experts' perceptions towards sustainable education and curriculum development showed the necessity of the integration of the environmental, social and economic issues. Some responses suggested including some issues such as water shortage, nuclear energy, traffic jam and accidents, global warming in which most of them got agreement among the faculty members. Such findings revealed that involving such, similar issues, and providing solutions for them should consider the interconnections between social, environmental and economic topics. To integrate sustainability in education and in curriculum in particular, curricula developers could begin with designing plans for sustainability pedagogical framework. After that by drawing attention to the inter-relations between social, economic and environmental dimensions during course specifications.

Results Related to Statistical Differences in the Scores of Experts' Perceptions

Regarding the second question in this paper related to statistical differences in the scores of the experts' responses, the results showed that there are no any significant statistical differences in the scores of the experts' responses towards sustainable education, curriculum development, and sustainability and development. As well as the results of the third question in this paper showed that there are no any significant statistical differences in the scores of the experts' responses towards sustainable education, curriculum development, and sustainability and development according to variables (academic rank, years of experience, and university). Hence, each one of these variables was discussed separately.

No.	Domains	Academic Rank	Sum of Squares	DF	Mean Square	F-Value	Sig.
1	**Sustainable Education**	Between Groups	0.19	2	0.10	0.52	0.60
		Within Groups	4.92	27	0.18		
		Total	5.11	29			
2	**Curriculum Development**	Between Groups	0.16	2	0.08	0.44	0.65
		Within Groups	5.07	27	0.19		
		Total	5.168	29			
3	**Sustainability and Development**	Between Groups	0.19	2	0.09	0.16	0.86
		Within Groups	16.10	27	0.60		
		Total	16.29	29			

It is clear from the table that there is no statistically significant difference in the responses of the experts in the domain of sustainable education according to the variable of academic rank. The value of F reached (F=0.52) and the significance level reached (0.60) which is statistically significant indicating to there is no significant difference at a = 0.05 since the F-value > 0.05.

It is also clear from the table that there is no statistically significant difference in the responses of the experts in the domain of curriculum development according to the variable of academic rank in the three levels (professor, associate professor, and assistant professor). The value of F reached (F=0.44) and the significance level reached (0.65) which is statistically significant indicating to there is no significant difference at a = 0.05 since the F-value > 0.05.

In terms of the domain of sustainability and development, this table showed that there is no statistically significant difference in the responses of the experts according to the variable of academic rank. The value of F reached (F=0.16) and the significance level reached (0.86) which is statistically significant indicating to there is no significant differences at a = 0.05 since the F-value > 0.05.

No.	Domains	Years of Experience	Sum of Squares	DF	Mean Square	F-Value	Sig.
1	**Sustainable Education**	Between Groups	0.17	2	0.09	0.46	0.63
		Within Groups	4.94	27	0.18		
		Total	5.11	29			
2	**Curriculum Development**	Between Groups	0.09	2	0.04	0.23	0.80
		Within Groups	5.08	27	0.19		
		Total	5.17	29			
3	**Sustainability and Development**	Between Groups	0.51	2	0.25	0.43	0.65
		Within Groups	15.78	27	0.58		
		Total	16.29	29			

It is clear from the table that there is no statistically significant difference in the responses of the experts in the domain of sustainable education according to the variable of years of experience. The value of F reached (F=0.46) and the significance level reached (0.63) which is statistically significant indicating to there is no significant difference at a = 0.05 since the F-value > 0.05.

It is also clear from this table that there is no statistically significant difference in the responses of the experts in the domain of curriculum development according to the variable of years of experience. The value of F reached (F=0.23) and the significance level reached

(0.80) which is statistically significant indicating to there is no significant difference at a = 0.05 since the F-value > 0.05.

In terms of the domain of sustainability and development, it is also clear from this table that there is no statistically significant difference in the responses of the experts regarding the variable of years of experience in the three levels (less than five years, less than ten years, and more than ten years). The value of F reached (F=0.43) and the significance level reached (0.65) which is statistically significant indicating to there is no significant differences at a = 0.05 since the F-value > 0.05.

No.	Domains	University	Sum of Squares	DF	Mean Square	F-Value	Sig.
1	**Sustainable Education**	Between Groups	0.31	4	0.08	0.40	0.81
		Within Groups	4.780	25	0.19		
		Total	5.11	29			
2	**Curriculum Development**	Between Groups	0.52	4	0.13	0.69	0.61
		Within Groups	4.65	25	0.19		
		Total	5.17	29			
3	**Sustainability and Development**	Between Groups	0.93	4	0.23	0.38	0.82
		Within Groups	15.35	25	0.61		
		Total	16.29	29			

It is clear from the table that there is no statistically significant difference in the responses of the experts in the domain of sustainable education according to the variable of university. The value of F reached (F=0.40) and the significance level reached (0.81) which is

statistically significant indicating to there is no significant difference at a = 0.05 since the F-value > 0.05.

It is also clear from the table that there is no statistically significant difference in the responses of the experts in the domain of curriculum development according to the variable of university. The value of F reached (F=0.69) and the significance level reached (0.61) which is statistically significant indicating to there is no significant difference at a = 0.05 since the F-value > 0.05.

Regarding the domain of sustainability and development, this table showed that there is no statistically significant difference in the responses of the experts according to the variable of university in the five universities (Sana'a, Ibb, Al-Andalus, Al-Hekmah, and Al-Qalam). The value of F reached (F=0.38) and the significance level reached (0.82) which is statistically significant indicating to there is no significant differences at a = 0.05 since the F-value > 0.05.

Given these result, it is indicated that the experts in the three variables (academic rank, years of experience, and university) have the same degree of agreement and disagreement towards sustainable education, curriculum development, sustainability and development. Such kind of perceptions emphasizes that the experts are equally aware of how useful and helpful is the implementation of sustainability education in the teaching and learning processes. As for sustainable education, it is very essential and provides students with many sustainable ideas and topics as well as benefits and outcomes. It is also helpful to students regardless of their university levels or courses that they study.Such kind of perceptions also emphasizes that the experts are equally aware of how essential is the development of curriculum at designing or evaluating stages and at preparing courses specification as well. They are also equally aware of the significance of sustainability and development factors that are necessary to face the current issues found around the globe.

The Major Findings

This paper has substantial features for typical scope of themes to access the globe and a foundation on an educational concept specifically. Regarding sustainable education, it affects the selection of teaching methodology, so it is targeted directly at teachers at schools and professors at universities. Therefore, modern and sustainable teaching and learning strategies should be innovated and applied to help in achieving the targeted objectives. On the other hand, curriculum development is also targeted at designers, decisions makers, and faculty members to offer a guideline for schools and universities to involve activities and programs, interrelated environmental, social and economic perspectives for sustainability issues. The findings revealed that the experts agreed that curriculum should be as a frame of reference for the development of learning and teaching process to increase students' awareness at universities about the global issue of sustainable development. That means to make academics more engaged in the global calls for forwarding higher education curricula to address sustainability creating a balance in representing the sustainable development goals. Such findings confirmed the imperative need for institutions to become more open particularly with university curricula to be for the design of the fundamental principle of sustainable development. The point is not to add more themes, but to strengthen the topics and concepts contact to reality in which education oriented towards sustainable future for ending extreme poverty, renewable energy, protecting future generations, waste management, cultural diversity, human population growth, protecting natural resources, controlling climate change and the like.

To get deeper insights into this field of interest, this paper investigated the experts' perceptions towards sustainable education and curriculum development. In its theoretical part, the focus was on sustainable concepts in term of (educational, environmental, social and economic) that can be affected todays' issues. In addition, the subject of the analysis was on

the experts' perceptions towards sustainable education and curriculum development. Therefore, in addition to their general perceptions towards sustainable education and curriculum development, their perceptions regarding sustainability and development were also analyzed. In the empirical part of this paper, the categorized model related to experts' perceptions towards the incorporation of sustainability in education was assessed. It can be understood as the main theoretical contribution of this paper following the results obtained, all categories were positively and significantly contributed to individuals' life and career as well as to society and the globe. The findings revealed one interesting point from this paper focused on the target field for humanity in this era as response for many previous studies. This paper recommended the inclusion of sustainable topics in education process through generalizing university graduate programs for sustainability.

The findings provide conceptual support to the education systems, to the sector of curricula development and to textbook authors to supply a considerable influence on global curriculum development for sustainability.

- Therefore, the alternative hypothesis of this paper "the experts' perceptions towards sustainable education and curriculum development are highly positive" was accepted.
- The alternative hypothesis of this paper "there are significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education, curriculum development, and sustainability and development" was rejected.
- The alternative hypothesis of the paper "there are significant statistical differences in the scores of the experts' responses at the level of (0.05) towards sustainable education, curriculum development, and sustainability and development according to variables (academic rank, years of experience, and university)" was also rejected.

The previous studies that conducted for exploring faculty members' perceptions towards sustainability went in line with this paper indicating that all of them agreed with the incorporation of sustainability at higher education system. As well as highly positive perceptions towards sustainable education and curriculum development significantly were shown reflecting that the experts had awareness of the significance of sustainability in education and the necessity of curriculum development as well.These results were in congruent with (Abozaied, 2018; AnupamaGunawardana et al, 2020; Coral, 2009; Cordova, 2024; Cotton, et al., 2007; Evans, Ferreira, Davis & Stevenson, 2016; Hopkinson and James, 2010; Kuram, 2023; Mansour et al, 2014 and Qablan, et al 2009).

Conclusions

This paper aimed at investigating the experts' perceptions towards sustainable education and curriculum development for specific purposes. The results showed that the experts' perceptions agreed with the paper objectives about the necessity for achieving sustainable education and curriculum development. Such perceptions indicated that the experts were familiar with sustainability concept in terms of education and curriculum development. Regarding the experts' perceptions related to sustainability and development, the results revealed that the faculty members expressed their interest and motivation about sustainability as a beneficial factor to solve global crisis. Considering the major findings, more focus was on the necessity for investigating the experts' perceptions towards sustainable education and curriculum development that should be implemented in the educational system particularly at university level. To achieve the targeted objectives, this paper focused on determining the educational, environmental, social and economic aspects as well as on proposing sustainable ideas to reach sustainability that is considered an essential aspect in education for development as a targeted requirement in which individuals sustain for better life and sustainability for best future. The three most important factors in the experts'

perceptions focused on sustainable education, curriculum development, and sustainability and development that could attempt to identify if there is something common among them. The findings revealed that they are related to sensing the positive opinions of experts considering their teaching experiences to the overcome different challenges arising from classical education. Regarding sustainable education and curriculum development, such factors attempt in changing the world by affecting almost every segment of human educational life and career. The justification for conducting this paper is to bridge the gap found in literature reviewed, which could be considered as a specific contribution of this paper due to the large existence of construct misspecification within the published research. The implementation of sustainability has drawn the attention of researchers in various scientific fields. On the process of developing curriculum, it was supposed to help students and teachers in different concepts, textbooks and courses. To conclude, to reach sustainability in education and individuals' life, it is very important to incorporate the targeted sustainable goals for development in curriculum and to mainstream the curriculum framework into implementing sustainable learning concepts.

Recommendations

In light of the findings, the most important recommendations are the following:

Incorporating the topics of sustainable education such as major nature, environmental awareness, global citizen values, as well as students' levels of self- norms, beliefs, and values when designing courses specifications for better learning and teaching process as well as for better career and life.

Examining the relationship between the adoption of sustainable technology for educational efficacy and sustainable education.

Shedding light on forthcoming curriculum development efforts at faculties and universities, providing opportunities and administrative actions to support sustainable education and sustainable educational environments.

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