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Narratives on Education for Sustainable Development in Malaysian Universities

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Abstract: Higher education institutions are powerful forces in producing the human capital necessary to drive sustainable development. To support global aspirations to improve our planet, higher education institutions worldwide have been integrating the education for sustainable development agenda within the curriculum of a wide range of disciplines. This study aims to describe how Malaysian public universities have been implementing education for sustainable development. By adopting a qualitative research approach, this study gathered data through in-depth interviews and four focus group discussions with 16 sustainability experts from five public universities in Malaysia, renowned for their education provision and research in the field of sustainable development. Thematic analyses of the data reveal four prevailing approaches to implementing education for sustainable development at Malaysian higher education institutions. They are the organisational adoption approach, the competitive approach, the continuity approach, and the transformative approach. This study also projects the idea that the implementation of education for sustainable development (ESD) requires solid support from the institutions' senior management to prioritise it in their managerial agenda.

Keywords: education for sustainable development; higher education institutions; public university; sustainability; citizenship

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1. Introduction

Over the course of the past couple of decades, the United Nations (UN) has been orchestrating global development through two interconnected phases of its centrepiece agenda: the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs). Although Education for Sustainable Development (ESD) pre-dates these UN projects [1], ESD has become one of the strategic vehicles of the current SDG agenda to address economic, social, and environmental issues and reorient learning for a more sustainable world [2]. In the context of education emerging as a driving force for the implementation of all SDGs [3], ESD has been further catalysed by UNESCO in 2020 through the ESD for 2030 Agenda [4]. It 'sets out the urgent challenges facing the planet and underlines the implementation of the new Education for Sustainable Development: Towards achieving the SDGs (ESD for 2030) framework, which aims to increase the contribution of education to building a more just and sustainable world' [5]. Thus, ESD came to denote the development of competencies for promoting these three interconnected components of sustainable development—environment, economy, and human well-being—and higher education institutions (HEIs) have been emerging as the vehicles for ESD [6].

However, the dedication of HEIs in Malaysia to the promotion and implementation of ESD is under-researched. Relevant available research focuses, for instance, on implementing ESD not at the university level in Malaysia but rather in schools—e.g., [7]. While research conducted in the HEI context in Malaysia exists, it indirectly or inexplicitly links to ESD, e.g., [8,9], as it is more about education about sustainable development rather than

education for sustainable development. In addition, the concept of sustainable development appears to be restricted to the environmental sphere. Perhaps this is due to the origin of the concept of sustainable development that focused on the environment before the term 'environment' was viewed more expansively, including human-made elements, which are the economic and social pillars that made up the sustainable development pillars [10]. Based on our early investigation, there are no specific policies—neither at the ministry nor institution level—found to enforce the integration of ESD in the activities that Mahmud et al. listed, i.e., research, educational, operational, and outreach activities, and students' engagement [11].

The study reported in this article aims to address the gap above concerning the approaches to the implementation of ESD in Malaysian HEIs. It has investigated this area from the viewpoint of national public universities in Malaysia. In particular, this study was conducted to answer the question: How is ESD implemented at Malaysian HEIs? By relying on in-depth interviews and focus group discussions with 16 sustainability experts from five public universities in Malaysia, as well as the thematic analysis of these data, this article presents and analyses four key themes that signify the approaches used by Malaysian HEIs in implementing ESD: the organisational adoption approach, the competitive approach, the continuity approach, and the transformative approach. In this study, sustainability experts included lecturers who oversaw sustainability action at their respective institutions and who may or may not have been affiliated with the teaching courses directly related to the conventional concepts of sustainable development which are associated with the environment. Instead, their involvement in ESD was based on a comprehensive overview of their role described in SDGs.

The findings on the four key approaches used by Malaysian HEIs to implement ESD are significant in contributing to the knowledge and practices in the field of ESD while also positioning HEIs as powerful forces of positive societal change in Malaysia.

2. Approaches to Education for Sustainable Development

Education for Sustainable Development (ESD) has become one of the strategic vehicles to address the triple bottom line and reorient learning for a more sustainable world. The role of education follows from the view that "Sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. We need to change the way we think and act. This requires quality education and learning for sustainable development at all levels and social contexts" (UNESCO, 2015). Sustainable development refers here to the development which 'allows the pursuit of economic growth but requires compliance with the planetary boundaries' [12] (p. 1).

UNESCO coordinates governments and other global stakeholders to develop policies and strategies for integrating ESD into national education systems. Despite their critical role, their perspective on the role of ESD is debatable. Even from dated literature, many scholars have cautioned against positioning action or behaviour change as the outcome of ESD. This argument rests on the assumption that this outcome is fundamentally more susceptible to learning based on indoctrination [13–15]. Where behaviour change becomes the goal, scholars remain concerned that the key learning processes and motivations for doing so could become subverted [13]. According to Bourn and Soysal, such an idea treats education as essentially transmissive [16]. By 'transmissive' they mean that the actions or behaviours are produced based on a set of facts, skills, and values that are engineered by governments, special interest groups, or industry which have preferred messages, agendas, ideologies, or consumer preferences.

One further factor is of interest to our research. According to Vare and Scott, a very large body of literature suggests that people rarely change their behaviour in response to a rational call to do so [17]. This further identifies weaknesses in transmissive approaches because the literature also suggests that knowledge and understanding alone are insufficient to lead to a commitment to action for sustainability [15,18].

The critique on the appropriateness of causing behaviour changes and developing actions as the outcome of ESD, in general, was supported by some of the 50 invited experts from 25 countries who registered for an international online debate on ESD in Gland, Switzerland called the ESDebate. According to them, such pre-determined educational outcomes would leave less space for reflective self-determination about educational outcomes and autonomous thinking; therefore, exploring more contextual pathways toward a better world might be hindered [14]. Due to this notion, the literature posits that it is important to teach people how to think and learn through the process, which celebrates a transformative approach [19,20].

The idea that they put forward when proposing a transformative approach in ESD is that the behaviour that is produced is the result of social reproduction, social efficiency, and confrontation towards global injustice, which involves proper judgment to decide which values are right or wrong in certain circumstances [14]. For example, from one point of view, recycling has been described in many studies, e.g., [21,22], as a pro-environmental action that we should promote to others. However, as Hopewell, Dvorak, and Kosior explain, "the amount of material going into the waste-management system can, in the first case, be reduced by actions that decrease the use of materials in products" [23] (p. 2116). Based on this opinion, by supporting the action of recycling, we are condoning actions that may paradoxically reinforce miseducative behaviour because, in terms of lifecycle analysis, it would be better to reduce the consumption of the materials in the first instance.

Vare and Scott provide some guidance as they distinguish between transmissive and transformative environmental education [17]. The former, which they call ESD 1, is seen as promoting "informed, skilled behaviours and ways of thinking," while the latter, which they call ESD 2, promotes "building capacity to think critically about [and beyond] what experts say . . . and exploring the contradictions inherent in sustainable living" [17] (pp. 3–4). Whilst they thought that both ESD 1 and ESD 2 are important, they also assert that ESD 2 is more important because our long-term future will depend less on our compliance in being trained to do the 'right' thing now and more on our capability to analyse, question alternatives, and negotiate our decisions [17] (p. 5).

According to Mezirow, people would experience more fundamental changes if they were involved in rational judgements and debates about what is happening in the wider world [24]. Tilbury suggests that richer educational experiences come from challenging existing mental models, policies, and practices, not simply accommodating them [25]. Critical judgement has been thought of as crucial to understanding social patterns that are change resistant. Dobson suggests that when pro-social and pro-environmental attitudes coexist, it is more likely that people will act [13]. In contrast, when attitudes and behaviours are driven by deep structures that suggest a particular change in behaviour without critical judgement, the changes in behaviour may regress at any time. Dobson explains this situation in which he tells how a fiscal incentive successfully encouraged a reduction in the use of private vehicles in Durham and reduced plastic bag use in the Republic of Ireland within a week [13]. However, if this motivation of fiscal incentive is removed, it is possible that people will revert to their original and unsustainable behaviour.

Based on this idea, it seems that instead of aiming to develop specific forms of behaviour, ESD should aim to train individuals to plan for, manage, and discover solutions for the difficulties that threaten the sustainable development of our planet [26]. In other words, ESD should develop environmental citizenship or thinking citizens. 'Thinking citizens' refers to those who can think and make their own decisions based on sound judgement in determining what counts as proper behaviour [27].

By aiming to develop sustainable citizenship, the resulting behaviour is not limited to any single individual and transcends the parameters of the private sphere as people would have the potential to acquire skills to influence change within a system, organisation, or wider society [25]. The underlying idea is that the duty of a sustainable citizen is to live sustainably so that others may live well. This underscores the importance of developing attitudes and not just influencing specific behaviour [28]. Sustainable citizenship involves

the development of attitudes that require sensitivity as well as embracing the complexity of how nature works, how participative learning might be effective, and how a progressive circular, social economy is evolving [28,29]. As a result, the emphasis on shaping one's attitude is believed to lead to more secure and long-lasting behaviour changes [13]. Dobson questions whether behaviour change necessarily leads to attitude change. However, if not attended to, there is the possibility of non-education, miseducation, and indoctrination to occur [13].

Despite these arguments, our concern stems from when Amador et al. reported that evidence from existing studies shows that HEIs only implement education about sustainable development, not education for sustainable development [30]. More recently, Stein et al. also problematised ESD by advocating the need to move from ESD to 'education for the end of the world as we know it' [2] (p. 274). This reflects that the practice may have been just a means of disseminating the experts' opinions on sustainable development rather than a chance to engage students in participatory and metacognitive activities about what sustainable development entails.

Participatory activities should adopt a whole-university approach to ESD. The whole-university approach has gained popularity in recent years, integrating sustainability comprehensively into all HEIs. As mentioned in the introduction, HEIs are expected to engage in sustainable development and ESD through research, education, operational and outreach activities, and student engagement [11], which eventually will involve the entire education community. The whole-university approach is consistent with the holism dimension, which implies that institutions should have a well-articulated, holistic vision of their ESD goals in terms of what they want their students to achieve, as well as the pedagogical methods and perspectives to achieve that vision [31]. In other words, this approach can be reflected by the organisational adaption of the concept of sustainable development and ESD. According to studies, this approach can significantly improve sustainability performance, student engagement, and learning outcomes [32].

In addition, continuous ESD interventions should be made to bring about change in sustainable development; this was asserted in a recent study [33]. Following Dewey's idea of continuity of experience, the study provided evidence that segmented and one-off practices of interventions were among the factors that contributed to their failure to produce meaningful environmental and sustainability learning outcomes [34]. As Mogren et al. also highlighted, ESD is an improvement process involving continuous learning and change [31].

3. Methodology

As mentioned in the Introduction section, this study was conducted to answer the question: How is ESD implemented at Malaysian HEIs? To seek answers to this question, the study adopted a qualitative approach. A total of 16 participants from five public universities in Malaysia participated in the study. The Malaysian Ministry of Higher Education classifies public universities into three categories: research universities, comprehensive universities, and focused universities [35]. Research universities focus on research areas, comprehensive universities offer various courses and fields of study, while focused universities emphasise specific areas related to their establishment.

In choosing the participating universities for this study, a key consideration was based on the institution's reputation and ratings related to sustainable or green campus practices. To prevent bias, the institution with which two of the authors of this article are affiliated was excluded from participating in the study despite its reputation in sustainable development rankings. Among all the public universities in Malaysia, five universities were chosen as these institutions are ranked the highest in sustainable-related rankings, such as the UI Greenmetric ranking and the impact ranking at the national level. In particular, three of the institutions are recognised as Regional Centres of Expertise on Education for Sustainable Development (ESD) by the United Nations. Furthermore, another institution has a long-established sustainable development centre. Among these five

samples, three are categorised as research universities, while the other two are identified as comprehensive universities.

The ethics review approval of this study was obtained on 14 October 2022 via the Ethic Committee of University Putra Malaysia (JKEUPM) (Project code no: JKEUPM-2022-954). Following this approval, the representatives for each institution (see Table 1) were selected by identifying their expertise in sustainability and positions in the sustainable development task force at their respective institutions. They were selected based on the information available on the official websites and recommendations from the universities' management to represent them in their institutional ESD practices. Although this may cause bias, it was indeed the purpose of the paper so that other institutions may learn from the best practices in the country. On the other hand, while we acknowledge that our sample size might be limited, it is important to note that our unit of analysis is focused on the institutions rather than the individual experts. Therefore, our findings provide insights into the broader trends and characteristics of these institutions rather than specific individuals. As the study adopted this sampling method, we obtained consent from the universities' management to conduct the study. Consent from the participants was obtained based on their agreement and attendance at the scheduled interview session as well as verbal and signed consent forms before data collection began.

Table 1. University sample profile.

HEI	Institution Profile	No. of Participants (*n*)	Participant Label
University A	A research university, RCE on ESD	3	Participants 1, 2, and 3
University B	A comprehensive university, RCE on ESD	1	Participant 4
University C	A research university with a long-established sustainability centre	2	Participants 5 and 6
University D	A comprehensive university	3	Participants 7, 8, and 9
University E	A research university, RCE on ESD	7	Participants 10, 11, 12, 13, 14, 15, and 16

Research data were collected through in-depth interviews and four focus group discussions. The interview discussions were conducted in accordance with their respective university groupings. For this reason, the data collection with the representative of University B was conducted through an in-depth one-to-one interview as they only sent one representative. Nevertheless, except for a few minor differences in the list of prompt questions, the techniques employed for both the focus groups and the individual interviews were identical. Both methods were semi-structured. The interview and focus group discussion protocols contained 11 key questions, with several prompt questions. This method celebrates individual differences, hence allowing the protocols to evolve based on responses given by the participants [36]. Nevertheless, the validation of the questions in the protocols was sought from an expert in adult and higher education. The validator provided feedback on the relevance and clarity of capturing desired data to answer the research question. The following are the validated key questions listed in the interview protocol and focus group discussions:

(i) How would you define ESD?
(ii) How did your institution respond to ESD?
(iii) How is ESD implemented in your institution?
(iv) Who are the other stakeholders involved in the implementation of ESD at your institution?
(v) How is ESD integrated into the curriculum of your institution?
(vi) Which area of ESD does your institution focus on?
(vii) What factors influence the implementation of ESD in your institution?
(viii) What are the challenges faced in implementing ESD in your institution?
(ix) What is the level of competency of lecturers at your institution in implementing ESD?

(x) What does your institution intend students to learn from ESD-integrated activities, courses, and programmes?
(xi) What are the recommendations for future actions in strengthening the implementation of ESD at HEIs?

All data collection sessions were audio recorded, followed by edited transcription. The data were analysed thematically, following Xu and Zammit's guide for analysis [37]. The analysis involved the usual data reduction process, which is through the process of open coding and categorisation followed by theme development. The data analysis was mainly inductive, as it is frequently celebrated in qualitative research for discovering unique findings.

In this study, the data analysis was manually explored and analysed using thematic analysis. By manually coding and categorising the data using memo writing, we maintained a high level of creativity and flexibility during the analysis process. We also employed several matrix formats and mind maps as our analysis tools during the coding and categorisation stages of the thematic analysis. This prompted a more thorough investigation of the data, finally producing a more organised explication of the developing themes. In addition, to ensure that our analyses and interpretations were defensible, we implemented reflexive practices by engaging in regular discussions with the research team members. The consensus among the team was achieved through a series of in-person group discussions which provided a valuable opportunity for open and direct communication.

4. Findings and Discussion

Rich findings emerged from the analysis of the data. The rest of this paper presents and discusses four key themes that signify the approaches used by Malaysian HEIs in implementing ESD: the organisational adoption approach, the competitive approach, the continuity approach, and the transformative approach. This is significant in contributing to the knowledge and practices in ESD.

4.1. Organisational Adoption Approach

Since the participants were selected from universities with a good reputation in sustainable-related rankings, it is not surprising that all the participants reported that the institutions they were affiliated with responded favourably to the call to implement ESD. One of the ways these institutions demonstrate their support is through an organisational adoption approach. Organisational adoption is when an organisation or a community decides to commit and initiate an evidence-based intervention in their settings [38]. This approach manifested either within a smaller organisation in the universities and/or in the context of the entire university.

All participating institutions have specific centre(s) and/or institute(s) with the specific aim of advancing efforts towards sustainable development. These institutions govern and oversee initiatives linked to ESD in their respective institutions. According to the participants, these organisations play an important role in striving toward the implementation of ESD. As shown in Table 1 above, three of the participating HEIs in the study are Regional Centres of Expertise (RCE) for ESD. An RCE is a network of organisations that supports local and regional communities' efforts for ESD. Through partnerships for sustainable development, they create cutting-edge platforms to facilitate communication between regional and local stakeholders and share knowledge and experiences. They promote the implementation of ESD through governance, collaboration, research development, and transformative education in a resource-efficient manner and build a local and/or regional knowledge base to assist ESD players [39]. Regarding being a global RCE, Participant 10 from University E explained,

> *"When we become a global RCE, when there are ESD events at the international level, that information will reach us. They will share them with us."*

In other words, this implies that establishing a globally recognised organisation within the institution, or memberships at a global level, is a stepping stone for the institution to become involved with ESD globally.

Being a member of the United Nations as a recognised organisation may seem advantageous regarding engagement opportunities and visibility. However, according to the representatives of University A, despite being an RCE themselves, they believe it is not necessary to be an RCE to implement ESD. In her own words, Participant 1 said,

> *"There are so many ways to brand ESD activities. We ourselves (at University A) have secretariats that changes our (secretariats') names over time. But yes, RCE is the expansion of that, which now everything centralised here."*

Based on the fact that other universities have a solid reputation in the area of sustainable development, although they are not RCE, this idea is viewed as reasonable. This also applies to the other two universities that participated in this study, namely, University C and University D.

Each sustainable development organisation of the participating institutions prepared a strategic action plan for the implementation of ESD in their respective institutions based on their institutions' vision, missions, and aspirations. Although many of them started with the goal of setting up sustainable campuses in their institutions, the action plan eventually served as a reference for the implementation of ESD in and beyond the curriculum. Some universities have more than one specialised organisation for ESD. Having more organisations has augmented the number of ESD implementation initiatives in HEIs. For example, three sustainability-related organisations at University A are distinguished from each other based on the three pillars of sustainability: environment, economic, and social. According to Participant 1, this method of division has helped them to address each of the goals in the SDGs more efficiently.

While all the universities have a specialised organisation for ESD, this should not be seen as a common case at all HEIs. Universities A and B have only recently founded their organisations in the last 1 and 3 years and there are other public universities that do not yet have such an organisation, if we consider those that are beyond the purview of the participating universities in this study. However, effective ESD implementation is not ensured by having a long-standing sustainability organisation. Both participants from University C acknowledged this. According to Participant 5,

> *"We have that purportedly well-known centre for sustainability. However, I must admit that we (the centre) didn't do anything much beyond our own centre, even at the university level. Except in facilitating a students' club. Because of this, many other universities are higher when you look at the ranking . . . We lag behind other universities by a wide margin . . . "*

The organisational adoption approach in the context of the entire university is reported to be implemented by developing a sustainable campus. A sustainable campus addresses, involves, and promotes the minimisation of negative effects on the environment, the economy, society, and health by using its resources for its primary functions of teaching, research, outreach, and partnership, as well as stewardship [40]. This practice was referred to by Yusliza et al. and Tanova and Bayighomog as Green Human Resource Management (GHRM) [41,42]. By adopting GHRM, HEIs are believed to be able to help society transition to sustainable lifestyles [43–45].

The participating institutions recorded respectable achievements in sustainable-related rankings due to GHRM adoption. However, despite their good reputation in the rankings, many participants revealed that it was not easy to convince the top management to invest in the resources to put GHRM into practice in the whole institution. As reported by Participant 2,

> *"It was not easy to get an allocation approved for it (resources)".*

This suggests that the senior management is not aware of the importance of ESD. Furthermore, this is a potential challenge for implementing ESD at HEIs. Understanding

the adoption of innovations by organisations and systems, as well as their ability to provide and sustain them throughout time, is necessary to successfully transmit evidence-based interventions [46].

Therefore, the role of senior university management is believed to be critical in implementing ESD using this organisational approach of organisational adoption. This was evident by the experience at University B, which has only recently established its reputation in ESD due to the change of its senior management members. The new senior management members are enthusiastic about ESD. Despite opposition from various parties within the institution, University B's autonomy has enabled them to make significant changes in the implementation of ESD. This information was shared by Participant 4,

> *"Many disagree with the agenda proposed by the new management team, including academics . . . But the management team insisted. So in a short time, various changes can be seen that support the implementation of ESD"*.

Therefore, convincing the senior university management of the importance of ESD is critical, as they have the authority to set the policies and the practises in their institutions [47].

4.2. Competitive Approach

Based on our analysis, one of the approaches considered effective in implementing ESD is a competitive approach, especially through non-formal learning activities. This necessitates explaining that education can be formal, non-formal, or informal. The difference is based on the flexibility of the curriculum structure and its implementation. Rogers defines formal education as the learning that "occurs as a result of experiences in an education or training institution, with structured learning objectives, learning time, and support which leads to certification [48] (p. 15). Formal learning is intentional from the learner's perspective." Unplanned or unforeseen events often lead to informal learning. Informal learning occurs as an outcome of another action, such as from daily life activities related to work, family, leisure, or incidental learning [49]. Non-formal education is a structured but highly customisable activity created by an institution, organisation, or group. It does not lead to certification but is intentional from the learner's perspective [48].

Based on these three approaches, all participants unanimously came to a consensus that it is more common to implement ESD through non-formal education. Through this approach, ESD is carried out through credited co-curricular course activities or through programmes planned by faculties, residential colleges, or other clubs and associations registered under the university. The other activities that were carried out at the HEIs, as reported by the participants, included community-based workshops, forums, and product development.

According to Participant 2 from University A, this approach is especially effective in encouraging student participation when the activities are organised in the form of a competition. This is evident from the following extract from the focus group discussion with participants from University A:

> *"They are very competitive. When it is done in the form of a competition, they are eager to win. Once they win, they maintain their reputation from the previous competition. Those who haven't won, they try harder to win."*

According to previous studies, e.g., [50–52], the duration of intervention matters in order to give participants sufficient time to develop a connection with nature that will promote environmental awareness. This suggests that a lengthier intervention will result in a better outcome. Alternatively, effective follow-ups after an intervention are necessary to reinforce learning [53]. Follow-up activities should not necessarily use the same outdoor learning approaches as the previous one [10]; however, as Participant 2 later added,

> *"Due to this (students being competitive), we organise more competitions to encourage continuous participation."*

This finding gives a new idea that competition can be an effective approach.

Apparently, this approach is effective among the students and the management of the universities. Due to their highly competitive spirit, Participant 2 and Participant 8 suggested that this approach is a way to convince members of the university's senior management to support ideas related to sustainable development. As reported by Participant 8 when explaining their endeavour to develop a sustainable campus:

> *"But that was how we convinced them. We justified using rankings. Usually, if they hear about rankings, they will be interested."*

As such, senior management commitment is a critical and desired component in employee behaviour that will eventually lead toward the organisational performance necessary to accomplish a goal [47,54]. In their study, Yusliza et al. reported that the top management from Malaysian manufacturing and service organisations supported initiatives toward implementing GHRM practices within their organisation [41]. However, the findings above suggest it may not be true at Malaysian public universities. Despite local public universities' reluctance to implement GHRM practices, the recognition of global rankings, for instance, may make them willing to commit and invest in implementing ESD.

4.3. Continuity Approach

While the participants explained that non-formal education became the preferred approach to implement ESD at participating universities, it may still be insufficient to meet the goals of ESD, as discussed in the literature review. Implementing ESD through a formal curriculum is crucial regardless of whether it is realised within or across existing curricula. Participant 4 from University B explained,

> *"Co-curriculum activities are usually only carried out once a week. This amount of involvement (in sustainability activities) is not enough. We want them to be involved every day so that it becomes a daily routine not just once in a while."*

He asserted that ESD should be integrated into the formal curriculum. The justification given was,

> *"We want to show how they (knowledge and skills related to sustainable development) can be applied . . . Our programmes prepare students to hold important roles in the industry in the future. When we integrate ESD in the curriculum clearly, only then they can see the connection of ESD with what they learn (subject content)"*

This response suggests that ESD should be implemented using a continuity approach. Due to this belief, the institution which Participant 4 is affiliated with has recently revised the curriculum offered to their students. As a result, ESD is now implemented within one of their core courses, which is compulsory for all students at the institution to enrol and pass.

This finding is concurrent with Syed-Abdullah's study [33]. The study investigated the influence of environmental education interventions on environmental behaviour change. The study revealed that the interventions failed to produce the desired outcomes due to a discontinued learning experience. Environmental education interventions usually use one-size-fits-all and one-off approaches without appropriate follow-ups to promote learning reinforcement [33]. The importance of the continuity approach has previously been discussed by Dewey in his seminal work Experience and Education through the concept of continuity of experience, which underpinned the abovementioned study [34]. According to Dewey, "The principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after" [34] (p. 35).

Built on this concept of continuity of experience, Miettinen provided an overview of how integrating ESD in the curriculum of different disciplines can contribute to sustainable development—regardless of whether the disciplines are directly related to ESD or not [55]. Continuity of experience is said to occur in situations where uncertainty and indetermina-

tion emerge and the normal course of forming a connection between different curricula disciplines is disturbed, resulting in an impediment to the connection's normal flow. This process requires observation of the concepts of the two disciplines. The observation would reveal if disturbance exists and whether efforts to solve the problem are required or not [55]. If a disturbance exists between the disciplines, the conditions causing the problem must be studied before the working hypothesis to solve the problem is proposed and tested using overt action or imaginative action. When this happens, the intellectual outcomes of the process could be used as a resource for emergent problems, otherwise, all these processes may reoccur and require constant attention and problem-solving [55].

In short, as Rieckmann explained, "In order to contribute to sustainable development, individuals need to learn how to understand the complex world in which they live, and how to deal with uncertainties, trade-offs, risks and the high velocity of societal (global) change" [56] (p. 41).

4.4. Transformative Approach

Miettinen's explanation of the continuity of experience also partly reflects the idea of the transformative approach [55]. As mentioned in the literature review section above, ESD should be transformative or follow the concept of ESD 2 to foster the growth of environmental citizenship or thinking citizens [14,17,20,25].

In the literature review section, we presented three possible approaches to ESD, following Dube's concepts of education for the environment, education through/in the environment, and education about the environment [57]. Based on these concepts, we believe that education "for" sustainable development is most relevant for a transformative ESD. The response from Participant 5 supports this. Participant 5 agreed that the curriculum should be oriented towards education *for* sustainable development, not education *about* sustainable development.

> *"Here at our centre, our students are taught not only about sustainable development but also on how to practice (related knowledge and skills). For the sake of the sustainability, that is what is important. The practice."*

However, as Stein et al. reminded us, ESD should focus not only on behaviour and thinking skills but also on enhancing one's ability to question conventional wisdom and go beyond it [2].

At University D, they have had programmes and courses related to environmental and heritage sustainability. However, based on the diversity concept of environmental education explained by Dube, the programmes and courses seem to focus more on environmental and heritage education [57]. The institution only started applying the idea of education for sustainability once it began taking steps to create a sustainable campus. This was explained by Participant 7,

> *"We used to not really understand the concept of sustainability. But when we want to develop this sustainable campus, we study the concept, we are exposed to the SDGs. The SDGs are especially helpful in clarifying what the components of sustainability are. So now, even though many lecturers are still unclear about the matter, however, the existing courses related to sustainability are seen to have changed. Become more meaningful in terms of learning outcomes planning."*

The finding above highlights the importance of having a clear framework to guide the implementation of ESD. While Participant 7 mentioned SDGs, another framework that is believed to be particularly relevant to implement ESD at HEIs is the framework of sustainable competencies. Rieckmann lists eight sustainable competencies [56]: systems thinking competency, anticipatory competency, normative competency, strategic competency, collaboration competency, critical thinking competency, self-awareness competency, and integrated problem-solving competency.

The relevance of this framework is reflected in the focus group discussion conducted at University E. All the participants from that institution unanimously agreed

that although a curriculum may seem irrelevant to any of the three sustainable development's pillars, i.e., environmental, economic, and social, they all have the potential to help students to develop sustainable competencies that are required for developing sustainable and thinking citizens. As the institution represented seven participants, it is worth highlighting that they were all experts in different areas. This included an expert in the English language, which was initially considered irrelevant to ESD. However, the English language expert, Participant 13, accentuated that his area can contribute to sustainable development. According to him,

> *"We can use themes or topics related to the environment in reading, listening, speaking activities . . . Thinking, solving problems . . . We want to develop students who can think and discuss any issues. We want them to propose and participate in problem-solving . . . Even the content is not really related, we can still contribute to ESD by focusing on these aspects. They are generic aspects. Any courses can integrate these (skills)."*

This finding shows that ESD can be widely implemented using a transformative approach unless the instructors are unaware of their role in implementing ESD or are incompetent to deliver a transformative ESD to their students.

5. Conclusions and Implications of Study

ESD aims to strive towards a balanced development of the environment, both economic and social. To achieve this, ESD should be delivered in a way that calls for a commitment from people from all walks of life. HEIs are important in preparing citizens to contribute to achieving this aim. The dedication of HEIs in Malaysia to this, however, is under-researched. This important study investigated this topic from the viewpoint of the national public universities in Malaysia.

Based on the experience of the institutions reputable in sustainable development rankings, the findings of this study revealed four key approaches that have recently been used to implement ESD at HEIs, namely the organisational adoption approach, the competitive approach, the continuity approach, and the transformative approach. The four approaches cover the implementation of ESD at the macro and micro levels at HEIs. This discovery has enriched the literature by listing some of the best approaches based on empirical data from a single study. (Previous research has mostly focused on one approach and separated it from others.) In addition, two of the four approaches presented, the continuity approach and the competitive approach, are novel and rarely discussed in the existing ESD literature.

Discussions of the four approaches also reveal the challenges of implementing ESD at these HEIs and open space for discussion on the topic. The findings indicate the critical roles of the whole community of the institutions to work in synergy and reflect a systemic approach. However, the bottom line is the effective implementation of ESD in these universities in HEI senior management, given the hierarchised and centralised control. It also becomes difficult to enact ESD in HEIs where HEI community awareness of its importance is low and the ESD agenda is not prioritised by HEI senior management. Given the importance of ESD in creating a sustainable future, the senior management of HEIs must recognise the importance of ESD and make it a strategic priority. To make senior management aware of the importance of ESD, relevant information and evidence on the benefits of ESD to their institutions must be provided. It is critical to convince them that ESD can assist institutions in meeting their sustainability goals while improving their reputation and competitiveness in a rapidly changing global environment. Involving external stakeholders in discussions with senior management, such as global sustainability experts and community leaders, is one way to provide a broader perspective on the importance of ESD and its potential impact. We can create a shared vision for a sustainable future and drive institutional change toward sustainability by making senior management aware of the importance of ESD. Setting clear targets for ESD implementation, providing resources for staff training and development, and ensuring that ESD is embedded in the curriculum and campus operations are all ways to accomplish this.

Instructors at HEIs also need the competencies necessary to execute ESD efficiently. Several strategies could be considered to support instructors in levelling up their teaching skills and competencies for ESD. First, professional development opportunities for instructors to improve their knowledge and understanding of ESD principles could be made available. This could also include training on incorporating ESD into the curriculum, creating ESD-related learning outcomes, and engaging students in sustainability issues. Second, improving the availability of relevant teaching materials such as case studies, simulations, and other teaching resources that demonstrate the application of ESD in higher education settings could be beneficial.

The significance of this study lies not only in revealing these trends, particularly in Malaysian HEIs, but also in positioning HEIs as powerful forces of positive societal change. The focus on the Malaysian context is also significant for steering away from the Global North, which has prevailed in the relevant available scholarship. Including voices from other parts of the world, such as Malaysia, in the debate is essential for developing an all-around understanding of where we, as humanity, are with ESD now and where we are going.

Nevertheless, further work is still needed in this country. This study only includes viewpoints from universities with a solid reputation in the rankings on sustainability, which may be viewed as a limitation of the study. Therefore, a further study could investigate the research topic from the perspectives of other universities regardless of their reputational status in ESD. The study is expected to provide an overview of the challenges in implementing ESD effectively. It is believed that by identifying the challenges, this study may assist HEIs in finding practical solutions that work in their particular situations.

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