

Education Sustainability Development (ESD) Theory in Islamic Education Management in the Digital Age

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Abstract

Education for Sustainable Development, often referred to as Education for Sustainability, is the main driver of the Sustainable Development Goals, which emphasise the need for everyone to have the knowledge and skills to face the challenges of creating a more sustainable world. However, although we can find examples of Education for Sustainable Development around the world, its potential for effective application in Islamic Education Management and its impact on achieving sustainable development goals compared to traditional curricula is often questioned. This literature review aims to encourage research and initiatives on Education for Sustainable Development in Islamic Education Management in the digital age in order to maintain the integrity of Islamic values. To achieve this goal, the researchers (1) describe methods and good practices for assessing the impact of Education for Sustainable Development; (2) underlines the specificity of the data to be collected in the context of this assessment method; and (3) outlines the conclusions of studies on the impact of Education for Sustainable Development that have served to highlight the limitations and challenges in achieving the goals of change in Islamic education management. This study shows that Education for Sustainable Development will only achieve its goals if the pedagogical approach is updated. Research that de facto shows poor results for Education for Sustainable Development allows subsequent researchers to complete the picture of the endogenous and exogenous factors that determine sustainable behaviour that must be taken into account, both in the design of impact assessment tools and in actual implementation.

Keywords: sustainable development education, management, endogenous, exogenous

Introduction

Islamic education in higher education faces various challenges and opportunities in an era of ever-evolving technological innovation (Hasan et al, 2022). Computers, which are used in almost all sectors of work, have directly changed human life. The world of education is no exception; computers and the internet can significantly change the world of education (Rosidin et al, 2022). The same is true for Islamic education, which is currently facing many challenges in line with technological developments (Mu'ammam & Tolchah, 2019). In this context, innovation in the management of Islamic education is very important in order to respond to challenges and take advantage of opportunities (Utami et al, 2022; Ibrahim et al, 2023; Homsombat et al, 2022). Innovation in Islamic education involves the development and application of new methods, strategies, and technologies to manage Islamic education systems in higher education (Ristianti et al., 2023; Arifin, 2023). Islamic universities throughout Indonesia must continue to adapt to the changing times and update their

approaches to Islamic management to keep pace with contemporary demands and achieve sustainable competitive advantage. In this regard, the Indonesian government has complemented every national education policy with the concept of piety in thinking about the balance of the three pillars of sustainable development and ways to nurture and build the capacity of Indonesia's critical, rational, and dignified human resources so that Indonesia's development is sustainable (Ministry of Education and Culture, 2014).

The main challenge facing Islamic education in Indonesia is how to maintain the integrity of Islamic values in the curriculum and learning process, provide high-quality education, develop qualified Islamic leaders and scholars, and build an inclusive and diverse educational environment (Putri et al, 2022). Therefore, it is time for the concept of *ESD* to be understood and implemented by the entire education community in Indonesia (Ministry of Education and Culture, 2014), including Islamic education in higher education.

Some of the challenges and opportunities for Islamic education in the digital era are (1) maintaining the integrity of Islamic values in daily life, (2) providing a curriculum that is in line with digital developments, (3) providing high-quality education, (4) developing qualified Islamic leaders and scholars, (5) and building an inclusive and diverse educational environment. Meanwhile, the opportunities for Islamic education are to utilise new methods, strategies, and technologies so that Higher education can manage the Islamic education system effectively and remain relevant in today's world. The application of information and communication technology (ICT) is highlighted as an important aspect of innovation in the sustainability of Islamic education management. To achieve this sustainability, there is a theoretical approach that discusses *Education for Sustainable Development (ESD)*, which is a learning process based on noble ideals and principles of *sustainability*. *ESD* focuses on all levels and types of learning in order to provide quality education and enhance www.unescobkk.org/education/esd-unit/definition-of-esd, (2023).

This includes the use of technology for learning administration and management, facilitating distance learning, and fostering interaction between students and lecturers from different locations. Many Islamic education researchers have studied the development of Islamic education in the digital age, particularly learning media, learning methods, and Islamic curricula. Based on data from publishers Elsevier and Emerald on 2 October 2023, there was only one research article related to Islamic education published by Elsevier out of 100 articles selected at random using the *Harzing's Publish or Perish* application for the period 2019-2023 using the keywords *Islamic Management Education: Sustainability and Digital Era*. Therefore, the gap in this research and one of the important parts, namely the research topic that discusses crucial issues related to the development and progress of Islamic education, challenges and opportunities, as well as the role of technology in effective management strategies in higher education, is still rarely studied. For this reason, this study will explore this topic in greater depth.

Methods

This study uses a qualitative approach using a literature review method. Relevant literature related to the topic of sustainability in Islamic education management in higher education was collected and analysed through discussion. In this research method, the researcher collected various types of literature such as journal articles, books, conference papers, and research reports related to the topic. These literature sources were then carefully

analysed to gain a deeper understanding of the challenges and prospects of sustainable Islamic education management in higher education in the digital era. Throughout the analysis process, the researcher considered the arguments, research methodologies, findings, and conclusions in the collected literature.

The aim is to identify patterns, findings, and concepts that emerge from the literature. This literature review method offers a comprehensive overview of the research topic and allows researchers to integrate existing findings from relevant literature. Thus, this study can provide a comprehensive understanding of the sustainability of Islamic education management in higher education, as well as the challenges and prospects associated with this topic.

Results and Discussion

The approach taken in this study refers to *ESD* theory. Sustainable development was introduced in the Brundtland report in 1987 as an effort to unite all countries in a shared vision for the future society and a society in harmony with nature. Sustainable development was introduced in response to two realisations

Education for Sustainable Development/ESD

According to UNESCO, *ESD* is about learning to:

- a. Respect, appreciate, and preserve the achievements or values of past successes;
- b. Appreciate the wonders and people of the earth;
- c. Live in a world where everyone has enough food for a productive and healthy life;
- d. Utilise, care for, and improve the condition of our natural environment;
- e. Create and enjoy a fairer, safer, and better world;
- f. Becoming more caring global citizens in exercising their rights and responsibilities locally, nationally, and globally.

UNESCO's implementation is based on ideas that are relevant to local interests and local cultures, so that *ESD* programmes will have a variety of unique approaches around the world. *ESD* contributes to sustainable development by empowering people through education, where everyone has the opportunity to take responsibility for creating and enjoying a sustainable future. The well-known slogan for *ESD* is "learning about change and learning to change". The vision of *ESD* can be formulated as follows:

- a. Everyone has the opportunity to benefit from quality education, learning the values, behaviours, and lifestyles necessary for a sustainable future and for positive social transformation.
- b. Everyone has the opportunity to become a person of dignity.

ESD priorities

ESD was first described in Chapter 36 of Agenda 21, which was produced at the Rio de Janeiro Earth Summit in 1992. There are four priorities (main drivers) in implementing *ESD*, namely

- a. Promoting and improving the quality of education; Ensuring that everyone has the right to education and the opportunity to acquire knowledge, skills, values, and perspectives that encourage and support community participation in decision- making.

- b. Reorient education at all levels towards sustainable development; ensure that curricula and pedagogy from pre-school to university emphasise education, knowledge, skills, values and perspectives related to a sustainable future. The emphasis is on reorienting the curriculum (not developing a new curriculum) and improving the quality of education.
- c. Raise public awareness of the concept of sustainable development; Build public understanding and awareness of sustainable development through public education, including informal education.
- d. Training human resources (train the workforce). Providing training to human resources (entrepreneurs, institutions, and the general public) to build the capacity to make decisions and demonstrate performance in sustainable behaviour and to implement sustainable practices at the local, regional, and national levels.

ESD Objectives in Islamic Education Management

ESD globally for 2030 emphasises the relationship between *ESD* and life, claiming that *ESD* contributes to the survival and prosperity of humankind (UNESCO 2020). This framework also emphasises that all humans have a responsibility in the current environmental crisis, stating that we must all learn to live differently, but we must also learn to live together sustainably on this planet. Therefore, within this framework, global *ESD* is described as an inclusive project involving all of humanity, which aims to educate individuals and groups to change their way of life.

First, modern economic activities (i.e., industrialisation, accelerated production, private ownership) and lifestyles and social practices, particularly Islamic education, which has now developed rapidly and spread throughout the world through globalisation. Second, Islamic education in higher education institutions is largely unable to teach environmental issues; therefore, Islamic education needs to look at the relationship between the economic environment of society and culture. Therefore, the analysis of sustainable development and *ESD* in Islamic education requires an integrated approach that connects education with ecological, social, and economic aspects of sustainable educational development.

This section will explore the challenges of Islamic education in higher education, as well as discuss insights from a pedagogical perspective on how educational change can occur starting from the "classroom". Education is both a system and a practice in the context of teaching and learning. According to Social Practice Theory (SPT), the goal of education is not individual behaviour itself, but rather social practice. SPT argues that the world is inhabited by social practices and interconnected elements. Human behaviour is not the result of rational choices, but rather the result of many semi-conscious and highly routine actions that people perform in their daily lives (Breadsell et al, 2019).

The concept of social practice highlights the socio-cultural influence on individual behaviour and also recognises the influence of individuals on society. Social practice is a combination of meaning, skills, and technology. Thus, change to achieve sustainability in Islamic education management is very possible. To that end, *ESD* has contributed insights towards such sustainability.

One moment of change that has an impact on the sustainability of education is a crisis, in which case a crisis can be a potential moment of awakening. For example, global crises

such as ecological, climate, economic, and health crises due to COVID have led to revisions in the education system. According to Marouli *et al* (2016, 2018, 2019), they offer an analysis of differences and heuristics for planning educational practice objectives and their implications for pedagogical methods and the means/tools to be used to achieve the relevant objectives. The "community of practice" of educators helps to improve alternative teaching/learning ideas and methods, thereby reducing fatigue in higher education (Trayner, 2015). Changes in educator training by incorporating lessons from pedagogy will also help because they will improve students' skills to bring about social change through education.

Overall, most studies aimed at proving the effectiveness of ESD show encouraging results in terms of disseminating knowledge and skills in the future compared to traditional Islamic education models. According to Hopper *et al* (2021) in the study by Goodhew and Murray, which examined the impact of a values- and sustainable behaviour-centred ESD approach on 67 students over eight months, it was found that students had greater environmental sensitivity. Therefore, with this ESD approach, it is hoped that Islamic education will also gain a better understanding of the perspective of global change.

According to Seeberg and Minick in Hopper *et al* (2021), the effectiveness of the cross-cultural competence approach in acquiring skills and global perspectives among a population of prospective teachers aged 23-25 over a four-year period also noted greater openness in terms of mindset, reconsidering prejudices, positive impacts on communication skills, and increased sensitivity to others and to the power of community, all of which are specific *ESD* competencies from various benchmarks.

Through an eight-week *ESD* training course leading to a UN environmental negotiation simulation, Paschall and Wüstenhagen in 2012 also observed clear results in terms of their students' cognitive and affective knowledge acquisition at the end of the training. This knowledge can certainly be utilised by educators in higher education to: (1) better understand global warming and its challenges, (2) integrate the impact of global warming on the economy and vice versa, and (3) solve complex environmental problems.

The Use of Technology in Islamic Education in the Digital Age

In contemporary urban societies, the increasing distance from the natural environment and contact with nature is fundamental and instructive (Hilton, 2015). This mobilises curiosity and interest in new knowledge. Experience-based learning within communities and ecosystems, such as fieldwork and research in higher education, is a pedagogy that simultaneously stimulates all learners—mind, body, emotions, and spirit—just as in real life. If, as is usually the case, experiential learning activities are carried out in groups, then learning becomes a collective effort, a collective responsibility, and a collective joy (or disappointment), teaching students the importance of community and the challenges of building a community.

Digital technology has become an important part of the world of education and has many benefits. Digital technology provides access to a large amount of information and a diverse collection of knowledge, and can help transcend space and time. However, it is a tool that must be used with a very clear vision, purpose, and plan to achieve the desired results. Technology must be used and designed for a world that prioritises people and does not harm nature or others (Lange, 2015). In the next section, following the above discussion, a new

framework called Education for Environmentally Friendly Communities is proposed as an enhancement of ESD.

Development of Innovation and Sustainability in Islamic Education Management

Education is the responsibility of today's technological advances because it must adapt and compete with global education. This is illustrated by the widespread use of computers/gadgets and the internet. In the digital age, information and communication technology (ICT)-based education systems have become an advanced and modern learning model. Internet access as an educational facility is a priority in independent learning/self-reliance. Education should not only focus on academic achievement; it must also balance this with emotional intelligence. There is a relevance between educational goals and the integration of religious knowledge, science, and skills. Developing commendable behaviour and excellent character through independent learning in Islamic education in the digital age.

Islamic schemes and independence programme schemes with digitalisation need to go hand in hand to realise superior education (Arrozi *et al.*, 2022). Development Technology is a constantly evolving phenomenon. In the field of education, technology has become one of the supporting components in realising more advanced and higher quality education (Syafi'i and Yusuf, 2021). The reality today is that the demands of the times to apply digital technology in the learning system are very real. In line with the Ministry of Education and Culture's programme on independent learning that focuses on student independence (Al Ayubi and Islami, 2020), this change in digital learning strategies is appropriate, especially in the field of Islamic education. The principles of Islamic culture are flexible, so that current developments are shifting to a philosophy of modernisation that prioritises human independence and freedom.

Human freedom is related to independent learning in the current Indonesian curriculum. The essence of humanity is the object of education, which has become the paradigm of modern Islamic education in the digital era. The educational process guides students towards Islamic self-actualisation based on spiritual and scientific knowledge to shape constructive individuals (Nugraha and Fauzi, 2020). Spiritual knowledge serves as a guide for Islamic life, and science serves as a source of truth and knowledge.

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Theoretical Foundations of ESD: Holism and Pluralism through a Pedagogical Approach

Pedagogical innovation aims to empower citizens to take action and make decisions that are committed, sustainable, and responsible towards the earth, society, and economic systems with ESD that is different from traditional education models. There are two interrelated theoretical axioms first highlighted by UNESCO that underlie the rationale for ESD's existence.

The first is related to ESD content, which must be "holistic" (UNESCO, 2018) ("what" should be taught), and the second relates to pedagogy, which should be "pluralistic" (UNESCO, 2018) ("how"). Both aspects are well known in the literature: "ESD continues to grow both in pedagogical content and in visibility, which are growing in parallel".

The emergence of ESD theoretical content discusses various topics and disciplines. As stated by UNESCO, the definition of ESD is to urge various countries to ensure that all students are provided with the knowledge and skills to promote sustainable development. This includes education for development, sustainable lifestyles, human rights, gender equality, and promotion (UNESCO, 2018). ESD also teaches about a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and cultural contributions to sustainable development, which Islamic education also strongly emphasises.

Therefore, ESD is interdisciplinary education, namely a holistic approach that is able to integrate various perspectives from the three pillars of sustainable development (SD), emphasising interaction and contingency, in space and time, and at the local, regional, and global levels. Similarly, with its content that must be "holistic", the ESD pedagogical approach is a distinguishing element that is "pluralistic" in nature. The aim is to train students to recognise and integrate different perspectives, ways of life and values in order to equip them with the skills needed to take effective action in facing the challenges of today and tomorrow.

Behind this axiom lies the idea of interdependence and complexity of problems, so that efforts to solve these problems will not be effective if done independently. ESD teaches the solution. Indeed, ESD pluralism focuses more on reflection on issues than on teaching the "right answers". Therefore, ESD needs to be accompanied by new pedagogy that encourages action in different environments. ESD also enables young people to understand the world through the environments they observe themselves and to develop skills in sustainable awareness and behaviour (Hopper et al, 2021).

According to UNESCO, the origins of ESD and SD lie in holism and pluralism, which are generally viewed as intrinsic, in the sense that learning about all aspects of SD can only occur within a pluralistic understanding of social constructs, economic perspectives, and environmental balance. However, beyond these two axioms, it is the overall student experience that needs to be reformed by ESD. As Cortese points out, "students learn from everything around them; these activities form a complex network of experiences and learning" (Kopnina, 2020). Therefore, in addition to pure learning activities, both formal and non-formal, ESD in Islamic education management also aims to reform the entire range of activities that form the higher education ecosystem. This will certainly involve action on learning modules, research, operations and communication. At the same time, ultimately, the expansion of ESD will extend to other fields outside the traditional education structure.

Overall, a consensus is emerging: rather than simply introducing additional innovations in Islamic education management, the use of ESD concepts should be part of a substantive epistemological and pedagogical breakthrough. This breakthrough will be the key to overcoming the initial "epistemological error" (Kopnina, 2020), which considers humans to be above other living beings and at the centre of nature (anthropocentrism). To that end, realising the ideals of humanity that are considered to be within (ecocentrism) is supported by the conceptual principles of ESD, which will be expanded to other fields beyond theory.

Examining the Impact of ESD, from Theory to Practice

ESD is a type of education that aims to create a "sustainable citizenry" (VanDiemen et al, 2019) capable of facing challenges such as humans, the environment, and the economy both now and in the future. Although ESD is widely recognised in literature and implemented throughout the world, its practice in Islamic education management is still difficult to implement. To overcome these difficulties, the most common step that can be taken from ESD is to transform education in Islamic character education in accordance with ESD compared to traditional education schemes. In the mid-1990s, when the concept of ESD was still in its early stages, questions about the purpose of education were mainly analysed using an "information deficit model" which made the acquisition of knowledge a simple determining factor for behavioural change to support SD.

In other words, the *ESD* practice model believes that *SD* will directly encourage the acquisition of certain sensitivities that will trigger pro-environmental behaviour. However, this theory has since been heavily criticised. The criticism stems from the fact that if educators lack knowledge, it often hinders change. Therefore, knowledge alone is not enough (but unfortunately, the focus on knowledge and content remains at the core of most *ESD* programme design). Declarative knowledge alone (related to facts and data) is not enough to drive change; change can only be achieved through the transmission of three additional types of knowledge, namely (<http://www.panarchy.org/frankl/meaning.html>, 2020):

- a. Procedural knowledge: a set of "knowledge" acquired in the field through direct contact with the issues being taught;
- b. Effectiveness knowledge: a set of perceptions that make actions desirable and arise naturally from practice and debate;
- c. Social knowledge: all information about the intentions and goals of others, as well as their perceptions in the form of norms.

Thus, ESD also aims to transmit other affective elements related to specific knowledge and skills for primary schools and long-term behavioural transformation. Therefore, from a pedagogical and educational perspective, at all levels, a major change is taking place: namely, from the perspective of education and knowledge to that of action and competence. In the field of education, Kliem and Leutner in (Hopper et al, 2021) define "competence" precisely as "context-specific cognitive dispositions that are acquired and required to cope with specific situations or tasks in a particular field". First introduced in linguistics, then in educational science, it was psychology that definitively supported the concept. According to McClelland in (Hopper et al, 2021), education should "assess skills rather than intelligence," but in reality, not all Islamic education can implement this.

In general, in traditional education, individuals are not dependent on any context, so it is competence that reflects an individual's potential in cognitive and affective responses to specific demands or situations: in this sense, the term approaches what is expected in "real life"; as indicated by Connell, Sheridan, and Gardner, namely "realised abilities" (Misseyanni et al, 2020). Based on UNESCO in the Bologna Process, which began in 1999, education generally uses a standardised European-dominated university system based on general competencies, an approach that supports the emancipatory vision of *ESD*, referred to by Vare, Scott and Wals as "ESD 2".

The emergence of *ESD 2* helps build critical thinking and action capacities for the future world (this contrasts with "*ESD 1*", a more normative vision where *ESD* directly promotes

certain behavioural modes rather than developing capacities for action with autonomous thinking). The goal of *ESD* is to determine the competencies needed to realise *ESD*'s pedagogical objectives. When *ESD* is applied in Islamic education management, it enables students to become agents of change who are able to face challenges. Not only that, students are also expected to be able to overcome systemic, ambiguous, uncertain, and changing problems, and to become managers or leaders in the transition towards broader *SD* in all sectors.

Since the inception of *SD*, many researchers have attempted to compile a list of skills needed to build the three pillars of *SD*. Existing reference frameworks and terminology include the following (Lytras *et al*, 2018; Duroy *et al*, 2019:

- a. Sustainable skills;
- b. Competency development;
- c. Core Competencies for Sustainability;
- d. Key competencies;
- e. Core competencies for sustainability;
- f. Sustainability literacy

Although there are noticeable differences in detail, and without citing all references on *SD* issues in depth, these different frameworks provide a list of key competencies that provide consensus on what is expected through *SD* actions that will reflect the intrinsic quality of *ESD*. For example, the following is a summary of the list of competencies (UNESCO, 2018)

- a. Systems thinking competency, namely, "the ability to recognise and understand relationships, analyse complex systems, understand how systems are embedded in different domains and scales, and deal with uncertainty"
- b. Anticipatory competence, i.e., "the ability to understand and evaluate various possible and desirable futures and to create one's own vision for the future, applying the precautionary principle, assessing the consequences of actions, and managing risks and change."
- c. Normative competence, namely "the ability to understand and reflect on the norms and values that underlie one's actions and to negotiate values, principles, goals and sustainability targets, in the context of conflicts of interest, *trade-offs*, contradictions and uncertain knowledge.
- d. Strategic competence, namely "the ability to collectively develop and implement innovative actions that advance sustainability at the local level and beyond";
- e. Collaborative competence, namely "the ability to learn from others; understand and respect the needs, perspectives and actions of others (empathy); understand, relate to and be sensitive to others (empathic leadership), handle conflicts within groups; and facilitate collaborative and participatory problem solving";
- f. Critical thinking competency, namely "the ability to question norms, practices, and opinions; reflect on one's values, perceptions, and actions; and take a position in the discourse on sustainability";
- g. Self-awareness competency, namely "the ability to reflect on one's role in the local community and society (global), continuously evaluate and motivate one's actions, and deal

- with one's feelings and desires";
- h. Integrated problem-solving competency, namely, "the comprehensive ability to apply different problem-solving frameworks to complex sustainability issues and develop feasible, inclusive and equitable solutions that promote sustainable development by integrating the above competencies".

Conclusion

This literature review allows researchers to provide a more in-depth view of assessment methods, relevant impacts, applications, challenges, and results in the application of ESD in Islamic education. Although studies examining the impact of ESD are similar to other educational theory studies, special attention needs to be given to the use of "theory-based impact evaluation" in the specific context of ESD, especially in Islamic education management.

First, the cause-and-effect flow must be well defined, and the assessment of educational success should be more innovative, replicable, strategic, and original. Second, the complexity of student tasks requires a combination of several methods to triangulate results or even add a more participatory approach. The challenges of ESD assessment methods are diverse and include difficulties in following the principles of counterfactual analysis, the existence of bias, and the isolation of ESD effects from a large number of psychosocial factors.

The results found in the study indicate that ESD has brought encouraging results for students, including greater environmental sensitivity, reconsideration of prejudices, increased ability to solve complex problems related to the environment, increased ability to solve complex problems related to the environment, the possibility of referring to environmental issues as personal problems, and relative maintenance of the positive practices acquired. As a prerequisite for the expansion of ESD in Islamic education management in the future, the student assessment system must be more effective.

Effectiveness is at the heart of research on the concept of the many approaches explored, and experimental (quasi) impact measurement appears to be the most feasible in assessment. Unlike traditional education, ESD targets competencies, namely readiness to act oriented towards the three pillars of SD, namely (1) economic development, (2) interrelated social and environmental aspects, and (3) reflecting the goals of community development and social and environmental stability, all of which need to be measured properly.

In addressing these challenges, previous researchers conducted studies on the impact of ESD on education. The results show that most researchers are optimistic about the capacity of ESD to change individuals' perspectives on SD and the realisation of the Sustainable Development Goals (SDGs). Apart from the many biases and psychosocial factors that give rise to varying levels of behavioural change, ESD can only be achieved by practising ESD holistically, and also, in particular, by using a pluralistic approach that is even more concrete and allows for the development of an ecocentric perspective.

However, the logistical challenges posed by a global approach can be a limitation in ESD research. To confirm more positive results, Several literature agree on the need for long-term longitudinal impact studies, taking into account the concrete results of ESD. This can be realised over a period of time that is sometimes longer than current research.

Another area that needs to be invested in ESD impact studies on the future management of Islamic education is the more specific field of higher education. Indeed, can the results of the work done so far, especially in the context of higher education, be effectively generalised to the

context of Islamic education? In other words, aren't there certain specificities in higher education, particularly in Islamic education management, that would make the conditions for ESD success different in the context of non-Islamic higher education, which still needs to be proven through both quantitative and qualitative research? Finally, Bourn's research warns that for new concepts, Bourn recommends remaining open to unexpected findings that can be read in the data and being able to reorient the ESD implementation.

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