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Non-Formal Adult Education for Sustainability : A Preliminary Survey of the Research Literature

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Abstract: Non-formal education for promoting sustainability has become popular over the last decade. In 2017, the *International Review of Education* journal dedicated a special issue to non-formal and community learning for sustainable development. This study makes a case for “non-formal adult education” (NFAE) to also be included in the discussion. It aims to reveal current themes of the research literature related to education for sustainable development (ESD) in the context of NFAE, by analyzing research articles published in 15 peer-reviewed journals during the years 2015-2020. Two main questions structured this study: How is research on sustainability approached by researchers in NFAE? What are the current research themes of NFAE for sustainability? The analysis identified three different approaches of conducting research on promoting sustainability in the field of adult education: place and community-based learning approach, transformative learning approach, and ecological and environmental literacy approach. The study also revealed two research themes of NFAE for promoting sustainability and further identified the research gaps. Accordingly, eco-justice, barriers to sustainability, and social inequalities might be prominent areas of research.

Key words: Non-Formal Education, Adult Education, Sustainability, Education for Sustainable Development

1. Introduction

The issues of climate change, environmental deterioration, and pollution are getting a global consensus. These issues are discussed in media, academic meetings, and political agendas all over the world. With the rapid decline of nature's capacity, and given the complexity and pressure of current environmental challenges, sustainability will inevitably need to be a part of any comprehensive response (Wals & Benavot, 2017). It is widely acknowledged that education has a fundamental role in the pursuit of sustainability and achieving sustainable societies (Wals & Benavot, 2017; Wals, Mochizuki & Leicht, 2017). Therefore, many countries realized the significance of embedding these issues in their educational curricula and programs (Bengtsson, Barakat & Muttarak, 2018).

Non-Formal Adult Education (NFAE) is argued to respond to community needs and contribute to community development, yet it is neglected and reduced to literacy in some recent global policy documents (Lovren & Popović, 2018). Rogers (2019a, p. 515) argues that “non-formal education has seen a remarkable revival of interest across both developing countries and the more highly developed countries.” Even though interest is growing, many countries have not yet initiated programs for

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promoting sustainability through non-formal education for adults because their NFAE programs are focusing mainly on literacy and numeracy issues (Faradova, 2020). Although international policy documents of education tended to position sustainability issues in the context of formal education, the adoption of the Sustainable Development Goals (SDGs) in 2015 made the global educational discourse to shift towards the contexts of non-formal education and lifelong learning (King, 2017).

The concept of non-formal education has become a key term to the field of adult education and lifelong learning. UNESCO Institute for Lifelong Learning (2012, p. 8) identifies non-formal learning as:

“Learning that has been acquired in addition or alternatively to formal learning. In some cases, it is also structured according to educational and training arrangements, but more flexible. It usually takes place in community-based settings, the workplace, and through the activities of civil society organizations.”

It is noticed that non-formal learning might occur in varied contexts, at various kinds of organizations, and through many structured activities.

The discourse on linking adult education to sustainability became a major area of debate. The SDGs emphasize the potentiality of adult education and lifelong learning. SDG4 indicates that “all learners [to] acquire the knowledge and skills needed to promote sustainable development” (UN, 2015, p. 17). NFAE is no exception, indeed. There is plenty of research showing the value of NFAE in promoting sustainable development (Williams & Chawla, 2015; Calvente, et al., 2018; Clegg, et al., 2019; Rogers, 2019a; Ollis, 2020). Since then, the discourse on education for sustainable development started to gain a robust ground in the field of NFAE.

Education for Sustainable Development (ESD) is “an interdisciplinary approach to learning that covers the integrated social, economic and environmental dimensions of the formal and informal curriculum” (Advance Higher Education, 2010, p. 1). It implies the growth and stability of three linked pillars: environment, society, and economy (Leal Filho, Shiel & Paço, 2015; Summers & Cutting, 2016). Furthermore, ESD is a transformative learning approach aiming to “develop learner’s knowledge along with a conceptual understanding of the environment” (Summers & Cutting, 2016, p. 3). There is no global agreement on how sustainable development should be implemented. However, there is a consensus that sustainable development should be promoted through education (Leal Filho, Shiel & Paço, 2015; Summers & Cutting, 2016). Transformation towards sustainability is the major role of education and lifelong learning (Wals, Mochizuki & Leicht, 2017). Sustainability has become a key topic for both formal and non-formal education systems.

Literature reviews in the field of adult education provide insights into the way researchers apply theories and concepts throughout the research. Researchers seem to employ concepts as a theoretical lens in their work (Coryell, Sehin & Peña, 2018). Likewise, sustainability was used in research articles as a theoretical lens. It is also observed that sustainability offered researchers some distinct aspects that distinguished it conceptually from other forms of educational discourses attending to socio-ecological principles and practices. It is essential to examine inconsistencies across research literature about how sustainability was being employed and what major research themes were being discussed.

This study focuses on the field of non-formal education for adults¹. It argues for the necessity of developing a clear picture of research on sustainability in the field of NFAE. Sustainable development in education was studied within formal education systems generally (Eilam & Trop, 2010); early childhood education (Davis, 2009); higher education (Leal Filho, Shiel & Paço, 2015); and teacher student education (Sjögren, 2019). Currently, sustainability is an essential theme in the field of NFAE. The research articles of this theme are produced so unsystematically so far that there is no overall picture of them. Therefore, it is necessary to organize the trends of sustainability research in the field of NFAE through reviewing articles of specialized journals. This overall picture will contribute to clarifying what kind of themes attract much or little attention and deciding the direction of future research. My

curiosities about sustainability led me to search for how the methodological approaches of sustainability were conceived in NFAE research work. To this end, this paper reviews the research conducted on sustainability in the field of NFAE which could benefit adult education researchers about sustainability research trends from the past five years. The research questions are as follows: What are the ways in which researchers approach sustainability in the field of NFAE? What are the current research themes of NFAE for sustainability? This paper is divided into four parts. The first part deals with the methodology of the review, the second part provides the findings of the review process, the third part presents the discussion, and it will then go on to the last part, the conclusion.

2. Method

The research on sustainability in the field of NFAE needs additional effort and attention; to support this claim, a preliminary survey of the state of research in this field was undertaken. The study reviewed research articles from 15 international peer-reviewed journals in the fields of adult education and sustainability sciences, published from 2015 to 2020. The year 2015 was set as a starting point because it has witnessed adopting the SDGs in the United Nation's general assembly. The journals were selected from the Scopus database of the highly impacted journals in the two fields, listed upon the top 500 journals. Articles published in the field of sustainability sciences with a focus on NFAE were included; contrariwise, articles focused on contexts other than non-formal education for adults were excluded, as well as book reviews.

The process of selecting articles for this review included scanning the titles and keywords of the research articles in each journal to maintain addressing sustainability issues. Abstracts of articles with vague titles were read for the same reason. Some articles required further readings of some sections (i. e. methodology) to confirm that the research article fell within the scope of this study. After that, a search on the keywords 'sustain*', 'non-formal*', and 'adult' at all journals' digital platforms was undertaken to make sure that no related research articles to the current study were left behind. The asterisk symbol was used in the searching process to cover all possible alternatives: sustain, sustaining, sustainability, sustainable, sustainable development, non-formal education, and non-formal learning. Moreover, the researcher asked some experts in the two fields to recommend journal titles with the same study focus. All suggestions resulted in no new journals to be reviewed. This survey was narrowed to years (2015-2020), and the top 500 journals in the two research fields not only to maintain the quality of research articles studied but also to be more precise in tracking the research interest in sustainability issues upon the SDGs as a research trend in that period.

The next step included analyzing each research article to answer some preliminary questions related to the kind of the examined research article (theoretical framework, discussion paper, case study, survey, etc.); the theme of the paper; and the research questions, design, method, and outcomes. The research articles were organized into different categories according to the degree of resemblance. These categories provided answers to the current study questions. In sum, the research articles presented in this study fell into three categories: 16 case studies, 19 discussion papers, and 12 theoretical frameworks.

Table 1 shows the number of research articles included in this study corresponding to journal titles and the years of activity of the journals. To highlight the lack of research in the examined sector, only 47 research articles were included in this review. Almost one-third of the selected journals did not publish any articles on the topic of the current review, whereas there is one journal that has solely published one-third of the studied articles. The *International Review of Education: Journal of Lifelong Learning* has assigned the volume 63, issue 6 (2017) to non-formal and community learning for sustainable development.

Table 1. Journals and research articles

Journals	Activity years	No. of articles
<i>Non-formal adult education journals</i>		
Adult Education Quarterly	1950-2020	2
International Journal of Lifelong Education	1982-2020	3
International Review of Education: Journal of Lifelong Learning	1995-2020	16
Journal of Adult and Continuing Education	2001-2020	3
Journal of Further and Higher Education	1977-2020	0
New Directions for Adult and Continuing Education	1979-2020	1
Studies in the Education of Adults	1969-2020	5
<i>Sustainability and environmental education</i>		
Current Opinion in Environmental Sustainability	2009-2020	0
Environment, Development and Sustainability	1999-2020	0
Environmental Education Research	1995-2020	7
International Research in Geographical and Environmental Education	1992-2020	0
Sustainability	2009-2020	3
Sustainability Science	2006-2020	4
Sustainable Development	1993-2020	2
The Journal of Environmental Education	1969-2020	1

Although the *International Journal of Lifelong Education* is one of the notable refereed adult education journals, it has only published three research articles that examined the role of adult and community learning in transitions into a sustainable society. In terms of societal transformation, two out of the three published articles focused on education in the sustainability context rather than education for sustainability (Casey & Asamoah, 2016; Moyer, Sinclair & Quinn, 2016). It is widely acknowledged that many authors might interchange the two perspectives.

Another major refereed adult education journal, *Adult Education Quarterly*, also published a limited number of papers. However, the two research articles showed a broad focus on sustainability and non-formal adult learning. These papers aimed to understand adult learning within the climate justice movements and the role of adult learning in shaping the sustainable behaviors of learners (Kluttz & Walter, 2018; Moyer & Sinclair, 2020). The focus here was on the socio-ecological systems, as researchers investigated the margins between education and environment, unlike the narrow focus that positions sustainability research in discussing environmental issues (Davis, 2009). It worth mentioning note that there are no educational facilities that specialized in providing training for sustainability educators in the formal and non-formal education contexts at the moment (Zenchanka & Zenchanka, 2020). Therefore, the discourse on sustainability educator's competences in the literature is almost absent.

3. Findings

3.1. Approaches to research on sustainability in NFAE

The research topics on sustainability in NFAE should be based on integrative research approaches². Environment, society, and economy are the three entangled components of ESD (Advance Higher Education, 2010; Leal Filho, Shiel & Paço, 2015; Summers & Cutting, 2016). Therefore, integrative research approaches are proposed to be the proper procedure for researching NFAE for sustainability.

Hence, the current study claims that conducting sustainability research in NFAE should follow an integrative research approach. Kerkhoff (2008) has identified four principles of the integrative research

approach:

1. Embrace uncertainty
2. Engage stakeholders
3. Be transdisciplinary
4. Have a learning orientation.

To reveal how sustainability and environmental issues are approached in NFAE, research articles included in this study were further examined to explore different approaches. Each paper that discusses an approach of promoting ESD in NFAE was included, and papers were classified into different piles according to the similarity of research approaches and research environments. Three different approaches arrived at: place and community-based learning for sustainability, transformational learning for sustainability, and ecological and environmental literacy for sustainability.

However, the analysis of the research approaches revealed that all the reviewed research articles are based on non-integrative approaches which are known as fragmentation approaches. No single research article has fulfilled the four principles of the integrative research approach of Kerkhoff (2008). The next sections discuss the three approaches.

3.1.1. Place and community-based learning for sustainability

Non-formal education facilities, such as community learning centers, provide activities for promoting ESD (Rogers, 2019a). Several researchers highlighted place and community-based learning prospects of promoting ESD (Didham, Ofei-Manu & Nagareo, 2017; Rogers, 2019b). Community-based learning provides opportunities for local communities to develop their knowledge, skills, and attitudes about sustainable development. The activities of community-based learning facilities promote effective social education for sustainability (Didham, Ofei-Manu & Nagareo, 2017). These activities promote the solidarity of the community through cultivating mutual support between residents, so they can solve their problems and face future challenges.

This approach offers a holistic vision of promoting sustainability because it provides customized activities which assure lifelong learning opportunities for all the local community.

3.1.2. Transformational learning for sustainability

This approach provides a constructive change of knowledge and ability to use this knowledge in the future. Additionally, it presents understandings of our experiences and how we understand ourselves concerning the community (Cranton, 2006; Mezirow & Taylor, 2009). Some researchers discussed transformational learning as an approach for promoting sustainability (Aguayo & Eames, 2017; Paz Aedo, Peredo & Schaeffer, 2017), while others argued that ESD provides an opportunity for societal transformation to take place (Casey & Asamoah, 2016; Moyer, Sinclair & Quinn, 2016; Kaufmann, Sanders & Wortmann, 2019; Moyer & Sinclair, 2020). Thus, the dual relation between sustainability and transformational learning is evident.

Mezirow (1997, p. 5) explains that the “defining condition of being human is that we have to understand the meaning of our experience.” On the one hand, ESD provides insights on understanding experiences and developing prospect experiences towards community development. On the other hand, transformational learning contributes to improving experiences towards the environment. Hence, fulfilling the conditions of being human adds merit to this approach.

3.1.3. Environmental literacy for sustainability

Environmental literacy contributes to sustainability through offering a deep understanding of environmental issues, and therefore the field of environmental education for adults gained a robust consensus (Hanemann, 2019). Some researchers highlight informal and nonformal environmental adult education as a factor for sustainability (Valenti, de Oliveira & Logarezzi, 2015; Calvente, et al., 2018; Uzama & Walter, 2018; Clegg, et al., 2019; Ollis, 2020). While others make clear that discussing environmental issues such as climate change and the green-house effect should receive most of the

attention (Frappart, et al., 2016; Krasny & DuBois, 2016; Kluttz & Walter, 2018).

Community libraries have a potential role in acting as carriers for developing environmental literacy (Shrestha & Krolak, 2015). However, in the current age of information communication technology, environmental knowledge can be easily accessed and obtained. Hence, the most important issues of this approach are cultivating the environmental identity of adult learner (Williams & Chawla, 2015); and the environmental behavior (Levy, Orion & Leshem, 2016).

3.2. Major research themes

The current study identifies two main research themes. The first theme relates to socio-environmental discourse, and the second theme focuses on policy discourse. By reviewing the thematic areas that the current study identified in comparison to the global discourse on sustainability and environmental education, the following areas are identified as areas that receive the least research attention: eco-justice, barriers to sustainability, and social inequalities. Also, empirical and evidence-based research articles are scarce.

3.2.1. Human-nature entanglement: the socio-environmental discourse theme

This theme includes 35 of the 47 studied articles. The analyses of articles focusing on human³-nature relations revealed grounded understandings of social and environmental research as an interdisciplinary research field. For instance, the recent migration and refugee issues in Europe are examined through a sustainability-focused lens (English & Mayo, 2019). Another good example, is incorporating the concepts of ecotourism into social education and lifelong learning in Japan (Uzama & Walter, 2018). This theme also covers the areas of sustainable livings and futures (Carr, et al., 2018; Holfelder, 2019; Kaufmann, Sanders & Wortmann, 2019; Ünal & Kaygın, 2020); sustainability literacy (Post, 2016; Hanemann, 2019); and environmental issues and behaviors (Valenti, de Oliveira & Logarezzi, 2015; Krasny & DuBois, 2016; Clegg, et al., 2019). However, eco-justice and social inequalities are ultimately receiving under-representation in the literature (Griswold, 2017).

3.2.2. The policy discourse theme

This theme comprises 12 articles, focusing on the political discourse of ESD and SDGs. A great emphasis is given here to SDG4 (Post, 2016; Milana, Rasmussen & Holford, 2016; Quiroz-Niño & Murga-Menoyo, 2017; Boeren, 2019; Elfert, 2019; Halisçelik & Soytaş, 2019; Hanemann, 2019). Environmental and sustainability literacy is central to achieving sustainable communities. Still, literacy and basic education opportunities “are rather absent in current policy discourse, strategies and plans” (Hanemann, 2019, p. 269). The current study identifies ‘barriers to sustainability’ as a research gap. Only one paper was published in this area (Martin & Chen, 2015). Further research on sustainability barriers and reform plans is recommended.

4. Discussion

As previously mentioned that the review revealed three research categories where case studies received little attention in comparison to either discussion paper or theoretical frameworks. There might be some drawbacks to case studies in the field of NFAE. However, case studies may be useful in identifying the scope conditions of a theory (George & Bennett, 2005). The review revealed three different approaches to research on sustainability in the context of NFAE. The first approach focused on place and community-based learning. It is a holistic approach that highlighted the role of knowledge, skills, and attitudes for sustainability. The second approach discussed the societal transformation and the ways of cultivating experiences. The third approach focused on cultivating environmental identity for environmental and sustainable behavior. The three approaches to promoting sustainability shared the same general aim of building capacities for community development that is the ultimate aim of sustainability.

Considering the multifarious themes and approaches of sustainability across the review of research articles, it is discerned that the differences are based on the variety of human-centered versus human-environment approaches of adult education for sustainability. The results of the later approach revealed a higher environmental identity and awareness of the studied samples. Most of the studied articles highlighted the need for education to address the growing environmental challenges in today's deteriorated environment.

On the one hand, the majority of researchers used the concept of sustainability for meeting SDG4. In the current time of neoliberal economic dominance, some researchers raised the concern that if the issue of sustainability is being limited to economic aspects, this will serve the neoliberal agenda (Holford, 2016; Holfelder, 2019). On the other hand, a few researchers debated for a narrow concept of sustainability which comprises the issue of the environmental literacy of adults "as a natural segment of functional literacy" (Lovren & Popović, 2018, p. 12). This review also revealed no radical changes in research findings in the studied articles owing to the geographical region. Both developed and developing countries showed almost the same findings on similar research topics.

The reviewed research articles also revealed that sustainability is a broader concept and that it comprises economic, environmental, and societal sustainability. Many researchers discussed NFAE as a field of theory and practice, while others positioned NFAE in the discourse of lifelong learning. Additionally, in terms of environmental education, sustainability and environmental issues were seen as closely connected concepts. Further research is needed to clarify the entanglement of these concepts.

Some articles highlighted the importance of NFAE in promoting sustainability. Of the studies that examined the ways environmental awareness was developed, some researchers clarified that personal interests, social transformation, and promoting global-local partnerships were imperative (Valenti, de Oliveira & Logarezzi, 2015; Rogers, 2019b). Future research is necessary as we keep understanding the small difference among the varying approaches and implications of sustainability in the fields of adult education and community-based ESD, and how can NFAE accommodate future frameworks of sustainability (i. e. 2030's ESD proposed framework). The author of this review also hopes that researchers to investigate how pedagogical policy might be modified to incorporate sustainability concepts and issues. Additionally, further comparative studies of sustainability research approaches are necessary.

5. Conclusion

Two major research thematic areas are identified in this study: socio-environmental, and policy themes. In both themes, the discussion on socio-ecological transformation and the change of environmental behavior is noticed. Still, positioning sustainability research to environmental issues only, highlighting education *in* the sustainability contexts, and neglecting education *for* sustainability are major drawbacks. Future research is recommended to be directed towards education for sustainability.

Most of the studied articles are either theoretical in nature, or aimed at providing a description and reflection on a case study. Bearing in mind the traditional vision about the difficulty of implementing experimental research in the context of NFAE for sustainability, however, the current study identified two empirical research articles (Levy, Orion & Leshem, 2016; Carr, et. al, 2018). Environmental behavior of adult learners in the non-formal education context and their mechanisms of acquiring environmental and sustainability concepts are suggested areas for implementing empirical and evidence-based research.

The newly emerging field of NFAE for sustainability requires planning for the establishment of special educating centers for preparing sustainability educators. These centers are to provide training on sustainability education.

This study extends our understanding of the research on sustainability in the field of NFAE. It highlighted eco-justice, barriers to sustainability, and social inequalities as research gaps in NFAE and ESD. The research on ESD in relation to adult education and lifelong learning needs to be further discussed.

6. Notes

- ¹ The definition of non-formal adult education used in this study is education for adults that is organized by educational facilities but non-credential, it is non-degree-oriented education that recognizes adults as lifelong learners.
- ² This research adopts the ideas of Kerkhoff (2008, p. 146) that the integrative research approach is an interdisciplinary research “in the context of complexity [involves multi stakeholders] actively concerned with processes of change towards sustainability.”
- ³ The adult learner in the nonformal education context.

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