Article

Achieving and Monitoring Education for Sustainable Development and Global Citizenship: A Systematic Review of the Literature

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Abstract: This paper presents the results of a systematic review of literature (56 studies) related to Sustainable Development Goal 4.7. The goal of the research reported on here is to contribute to the discussion around strategies for working towards and monitoring SDG4.7 at the institutional level. Within this overarching focus, our review of the literature was designed to identify studies that have looked at both student learning and teacher education related to SDG4.7. This twin focus stems from the recognition that achieving the SDGs will be particularly difficult if policymakers are not attentive to both sides of the learning equation—that is, first, to the ways that teachers learn to teach about issues related to SDG4.7 and, then, the ways that students acquire this knowledge and are assessed. The five findings sections of this review correspond to the five areas of emphasis embedded in the language of SDG4.7, namely, education for (a) sustainable development, (b) human rights, (c) gender equality, (d) promoting of a culture of peace and non-violence, and (e) appreciation of cultural diversity. In accordance with the purpose of this review, the synthesis for each area of emphasis digs into the details of the educational interventions, monitoring and evaluation strategies, and results that are documented in the publications analyzed. Thus, this review can be useful for informing educational or pedagogical approaches related to SDG4.7, as well as for designing monitoring and evaluation tools for the SDGs.

Keywords: sustainable development goals; sustainable development; cultural diversity; peace education; human rights; gender equality; global governance; systematic review

1. Introduction

The Sustainable Development Goals (SDGs), approved by the United Nations in 2015, include a focus on education for sustainable development (ESD) and global citizenship education (GCEd). Specifically, by 2030, SDG target 4.7 seeks to "ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promoting of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and culture's contribution to sustainable development" [1]. However, what stands out is that the indicators that accompany different levels of monitoring of SDG target 4.7 do not focus on the institutional level. That is, to this point (writing in 2019), what has been identified are global and thematic level indicators—with the implication being that these indicators may not shed light on teaching and learning

at the level of schools, universities, etc. (For more information on the progress made to monitor these indicators, see United Nations [2] and UNESCO [3]. Although there seems to be some agreement about the language around the global and thematic indicators, the monitoring plan is unclear. It is likewise unclear what the language or monitoring strategy may be for regional or country level indicators for SDG 4.7.) The paper reports insights from a systematic literature review that has sought to respond to the gap identified above. Importantly, as will be further discussed, the insights of this literature review also have the potential to inform the data collection efforts related to 4.7, given that the indicators and data collection strategies for this target have yet to be agreed upon.

Stated directly, the goal of the research reported on here is to contribute to the discussion around strategies and options for working towards and monitoring ESD and GCEd at the institutional level. Within this overarching focus, our review of the literature was designed to identify studies that have looked at both student learning and teacher education related to ESD and GCEd. This twin focus stems from the recognition that achieving the SDGs will be particularly difficult if policymakers are not attentive to both sides of the learning equation—that is, first, to the ways that teachers learn to teach about ESD and GCEd and, then, the ways that students acquire this knowledge and are assessed. Although the impetus for this project stems from the need—at the level of the global goals—to devise monitoring strategies, by virtue of the kinds of studies that are reviewed here, which examine ESD and GCEd teaching and learning in practice, this review also sheds light on the strategies, interventions, and programs that teachers and other educational professionals have implemented and evaluated in order to assess their impact. Thus, this review can be useful for informing educational or pedagogical approaches related to ESD and GCEd, as well as for designing monitoring tools for the SDGs.

The remainder of this review has a structure that reflects its purpose. First, we situate this systematic review in relation to other literature reviews on the topics of focus here. Second, we detail our systematic review methods. This is followed by a brief characterization of the sample of 56 publications that we retained. The fourth section then presents the results of the literature analysis. As will be discussed, there are five sub-sections to our analysis. These five sub-sections correspond to the five areas of emphasis embedded in the language of SDG4.7, namely, education for (a) sustainable development, (b) human rights, (c) gender equality, (d) promoting of a culture of peace and non-violence, and (e) global citizenship and appreciation of cultural diversity and culture's contribution to sustainable development. In accordance with the purpose of this review, the synthesis for each area of emphasis digs into the details of the interventions, monitoring strategies, and results that are documented in the publications that were deemed relevant. Subsequently, the fifth section steps back to reflect on the larger significance of this review's findings. Here, we discuss the relevance of the insights shared for achieving and monitoring SDG 4.7 at multiple levels going forward.

2. Situating the Systematic Review

Each of the five themes encompassed in our literature review has been the subject of attention by scholars previously. This should not come as a surprise, given the broad themes encompassed by our review, not to mention their contemporary relevance. What stands out, however, is that other reviews of the themes included here tend to address one or another aspect of interest in the present review but do not reflect fully the aspects analyzed in this essay. For example, while other—very useful—reviews tend to take extant studies in a given area and then focus on how the studied educational programs were implemented, how these programs were evaluated, what their expected results were, etc., they tend not to do all three, let alone combine these dimensions together with an added focus on their implications for achieving and monitoring the SDGs (e.g., [4]). That said, this review complements and is complemented by existing reviews in important ways.

In the area of education for sustainable development, this review can work together with recent work by O'Flaherty and Liddy [5]. This paper examined the impact of international development education, ESD and GCEd. It provides an overview of learning assessment measures used, reviews the evidence on the impact on learners, and addresses some methodological and pedagogical questions

arising from the review. However, it does not provide much information about the practical issues related to the assessment of ESD and its implementation, as the present review does. Elsewhere, useful literature focuses on conceptualizing the key competencies in ESD [6], or else focuses on the development of national and international ESD indicators [7]—though, in these cases, there is no focus on program implementation.

When it comes to peace education, the existing reviews tend to focus on the contribution of education to peace and conflict in society generally, that is, beyond the classroom [8,9]. What is more, much literature on peace education consists of project descriptions and opinion pieces [9]. Helpfully, the Center for Universal Education [10] at the Brookings Institute recently has assessed numerous toolkits for measuring global citizenship education, and peace education in particular, in various organizational settings and at various educational levels, ranging from primary schools to adult education. Similarly, Oxfam's [11] guide for global citizenship includes practical guidance on classroom practice and case studies for kindergarten to high school level.

As for literature on education for cultural diversity, there is a more pronounced emphasis in existing reviews on training teachers—specifically when it comes to preparing preservice teachers to teach culturally and academically diverse students [12–14]. With the exception of the recent work by Bourn, Hunt, and Bamber [15], which explicitly focuses on the ways that teachers can be better prepared, these reviews tend to characterize the extent of diversity in schools at different levels, and then argue for the need to more appropriately train teachers. Unfortunately, as Oxfam [11] points out, there is a gap in the literature in terms of studies of teacher training for cultural diversity or in-depth studies of classroom programs. The relative lack of research in this area seems to mirror the administrative ambivalence that has constrained programs for global education and diversity [16].

Similar to the other thematic areas, reviews of empirical studies on human rights education and gender equality highlight the details, implementation, and outcomes of specific interventions [17,18] —in addition to documenting promising practices [19,20]. What remains to be done in the present paper is to build on these reviews by being attentive to studies that focus on the school, classroom, or programmatic level. Towards that end, the next section characterizes the methods that we employed to identify the studies reviewed here.

3. Methods

The systematic search of the literature was guided by two separate search protocols, with one protocol corresponding to each of the two foci stated above. Stated explicitly, the protocols were focused this way:

Protocol one: Focused on studies that assess student learning related to ESD and GCEd at the institutional level, meaning schools, classrooms, programmes, projects.

Protocol two: Focused on studies that assess teacher education related to ESD and GCEd.

The search protocols can be found in Appendix A. The terms in the protocols were derived from the definition stated above for ESD and GCEd (drawn from SDG 4.7). The protocols were then used to search two literature databases: Web of Science and ERIC. To capture relevant types of publications, we restricted the results in Web of Science to academic journal articles, books, and book chapters. In ERIC, we also allowed for organizational reports. All results reviewed were in English. We did not restrict the year of publication. We filtered by those results where the full text was available. Lastly, in Web of Science, we sought restricted the results to those from the following disciplines: education, educational psychology, sociology, education scientific, environmental studies, environmental sciences, psychology, and political science, since these were seen as the most relevant to the focus of the SDGs. The search for protocol one in Web of Science produced 1,182 results, while in ERIC it produced 696 results. The searches for protocol two produced many fewer results—24 and 10, in the two databases, respectively.

These results were then screened for relevance in various ways. A review of titles and abstracts allowed us to check for conceptual and empirical alignment with the focus of the literature review. This process allowed us to reduce the sample for both protocols to 93. We then obtained the full texts for these 93 sources, in addition to requesting additional literature recommendations from experts, who provided us with a further 30 sources. The experts were identified by the project leader (Yuto Kitamura, The University of Tokyo); they are researchers who have worked and written extensively on the issues at the heart of SDG4.7. At this point, we reviewed the full text of all 123 sources in order to ensure their relevance to the focus of the study. The criteria for relevance were those that are specified above, i.e., the studies had to address the implementation of a program or curriculum related to student or teacher learning that focused on ESD or GCEd. After reviewing all the sources in depth, a final sample of 56 studies was retained, with this sample serving as the basis for the findings presented in subsequent sections of this paper. All references for these 56 studies are included in Appendix B. Because our review is organized thematically—that is, according to whether the focus of each publication was, e.g., human rights, peace education, etc.—we grouped studies together on this basis, and not based on whether they focused on teachers or students. That said, in the thematic syntheses that follow, we are attentive to these two foci (i.e., students and teachers). The primary reason for which studies were excluded from the review was because they did not include an empirical dimension, that is, they did not look to assess in practice some approach to ESD or GCEd.

The review of the sources was facilitated by a literature review template. The team used the same template to review all the sources. This template is included in Appendix C. Notes and relevant text excerpts were placed in these templates and were then used later to facilitate analysis and synthesis of the retained studies, grouped by theme. These templates also allowed us to code different aspects of the studies, with these codes then being placed into a spreadsheet to allow us to easily summarize key characteristics of the studies—related, for example, to the kind of publication, the educational level of focus, the geographic focus of the study, the thematic focus, the organizational setting where the studied program or intervention was implemented, etc. The syntheses presented below summarize these key characteristics for those studies that correspond to each thematic focus, in addition to providing a detailed analysis of the findings of the studies. To that end, we sought to clarify the following when it comes to the program or intervention being implemented and its associated evaluation: (a) the program objective, (b) the nature of the pedagogical or educational activities being evaluated, (c) whether the program sought to be transformative, (d) the duration of the program, (e) who implemented the program, (f) how the program was assessed, (g) whether the assessment instrument is available, (h) the strengths and weaknesses of the assessment tool, (i) any issues or problems with implementation that could have affected the results, (j) the documented outcomes, and (k) the implications of the program for policy and pedagogy.

4. Literature Characterization

Among the 56 publications retained in this study, 57% focused on student assessment of ESD or GCED at the institutional level, while 41% focused on the assessment of teacher education in the areas of ESD and GCEd, and only 2% on both. Thematically, the content of the programs assessed focused mainly on education for sustainable development and sustainable lifestyles (39%) and education for global citizenship and appreciation of cultural diversity (35%), followed by peace education (12%), human rights (11%) and gender equality (4%), as seen in Table 1. A large majority of the programs in these studies focused on formal education: 88% of the programs were implemented either in university (52%) or in the traditional k-12 classroom (36%). While the level of program implementation varied from kindergarten to adult education, it was most common for programs to focus on the university level (53%), followed by secondary school (28%), and then primary school (19%).

Table 1. Focus of Retained Literature by Theme Evaluated.

	#	%
1—SDG (education for sustainable development and sustainable lifestyles)	22	39%
2—Human rights	6	11%
3—Gender equality	2	4%
4—Peace education (promotion of a culture of peace and non-violence)	7	12%
5—Diversity (global citizenship and appreciation of cultural diversity)	20	35%
TOTALS	57	100%

Note: The number of studies reviewed totals to 57 because one study is counted in two categories.

Geographically, the programs were implemented in 18 different countries. There was a lack of variation as programs tended to be implemented in either Europe (50%) or in North America (38%). Fewer studies focused on other regions, and no publications were from Central or South America, East Asia or South Asia. The table in Appendix D indicates the geographic focus of each study.

In the identified literature, the majority of the programs were implemented by teachers (66%) in various educational settings, such as schools and universities, while other programs were implemented by different actors (e.g., researchers, volunteers, NGO employees, etc.).

With regards to methods, quantitative and qualitative assessment tools were used to understand the associated outcomes. Specifically, 41% (n = 23) of the studies utilized qualitative data, 39% (n = 29) used quantitative data and 20% (n = 11) utilized mixed methods approach. Over half of the studies used non-experimental methods (66%, n = 37), followed by quasi-experimental (25%, n = 14) and experimental methods (9%, n = 5). Further, 29% of the programs claimed statistically significant effects, of which only 2 studies applied an experimental design. About half of the studies (50%) made available their assessment tools or instruments.

Finally, the majority of the assessed programs claimed or showed positive outcomes or effects (86%), and over a half of studies claimed that the programs sought to be transformative (64%). All studies claimed useful pedagogical/policy implications for further implementation of the SDGs.

4.1. Literature Syntheses and Key Insights

The presentation of findings from the literature proceeds in a way that reflects the frequency with which each theme is covered in the publications we reviewed. First, we discuss education for sustainable development, followed by education for diversity, and then education for peace education, human rights, and gender equality. We begin with those themes for which there are more studies. Note that the references for to all the studies cited in the findings sections presented below can be found in the master list of references for all retained literature, found in Appendix B.

4.1.1. Sustainable Development

Setting: **As seen in Figure 1,** roughly one third of the programs (36%) were implemented in a traditional classroom and over half of the programs (60%) were implemented in university contexts. Other programs (4%) were either conducted as informal after-school or summer activities, or as an NGO program. As can be seen from Figure 2, outside of higher education contexts, the most common level for implementation was middle school. The majority of the programs were conducted in Western countries, i.e., Europe (68%) and North America (14%). Other ESD programs were conducted in Oceania (4%), South-East Asia (9%), and in the Middle East (4%). There were no articles found to be focused on East Asia, South Asia, or Central-Latin America.

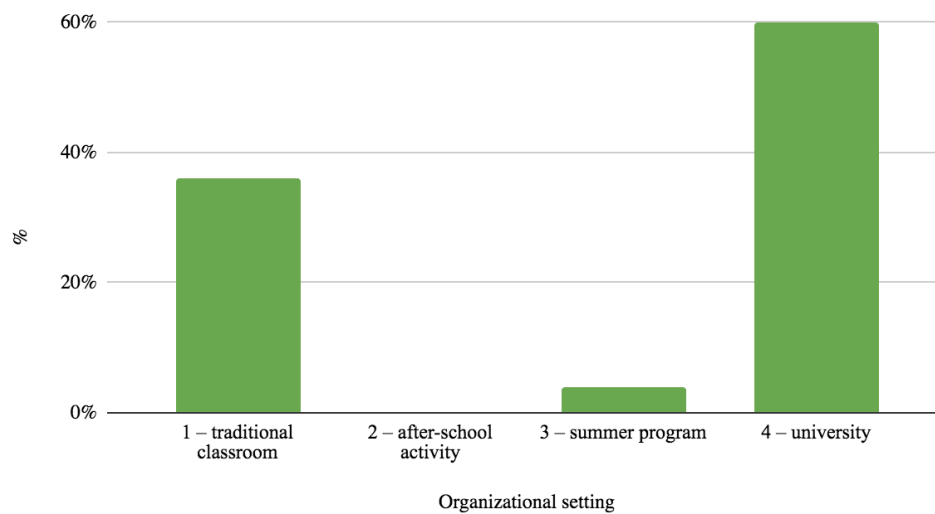Organizational setting where ESD programs were implemented.

Figure 1. Organizational Setting where ESD Programs were Implemented.
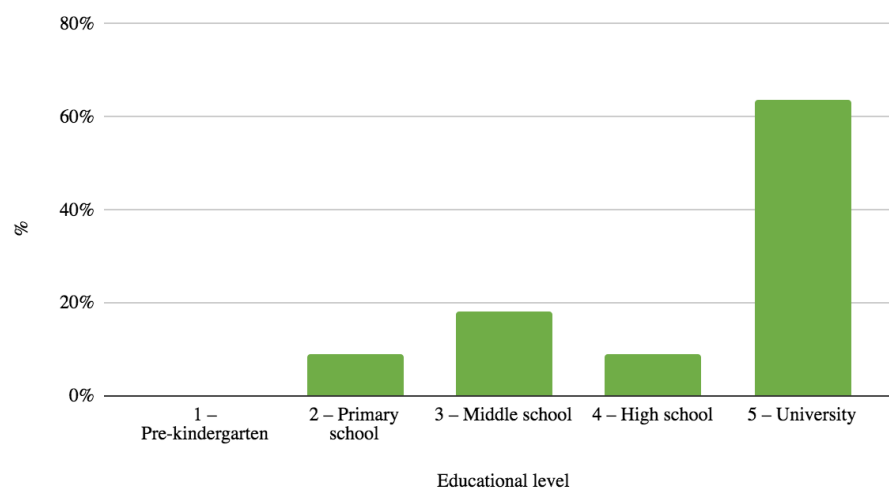
Educational level of ESD programs

Figure 2. Educational Level of ESD Programs.

Objective: The literature revealed most efforts and objectives of ESD initiatives are focused on promoting and enhancing teacher and student knowledge and understanding of, experiences with, and sensitivity toward sustainable development and global citizenship. The majority of the programs aimed at transforming participants' perception of sustainable development and promoting understanding of related ESD issues as well as supporting the development of key competencies, attitudes, skills, behaviors and dispositions appropriate to the goals of ESD. While there are various frameworks seen in the literature to define the key competencies, the key ESD-related competencies described in the literature include:

- Systems thinking
- Futures thinking (or anticipatory)
- Values thinking (or normative)
- Strategic thinking (or action-oriented)
- Collaboration (or interpersonal)
- Problem-solving abilities

- Action orientation

The key ESD teaching competencies for educators were described by the study of de Kraker et al. [21] in accordance with the report of the United Nations Economic Commission for Europe (2011) "Learning for the future: Competences in education for sustainable development". The authors explained that these competencies are categorized as "learning to know, learning to do, learning to live together and learning to be" and include:

- Integrative thinking (including insights from different disciplines, cultures and world views;
- Inclusivity (embracing a wide range of perspectives);
- Dealing with complexities (providing opportunities to engage with and create bridges across a range of concepts and ideas) [21] (pp. 763–764).

More specifically, these skills, behaviors and dispositions include critical, creative and innovative reflection and the ability to analyze national and local issues for their relevance to global sustainability, as well as a willingness and motivation to be actively involved in and engaged with local issues, and to make positive contributions to real-world sustainability problems (e.g., [22–25]). One program aimed at reconciliation between communities for protecting their common natural resource (i.e., [26]).

Description: Many of the ESD programs used a participatory approach, meaning, e.g., discussion and in-class group exercises. The constructivist pedagogical approach was also used in that students were encouraged to be creative and to apply their own knowledge to solve specific sustainable development issues. As a typical example of a group exercise, students were asked to use problem-solving methodologies learned in their courses to analyze real-world sustainability problems and to propose their own solutions. Usually in this approach, students have "relatively large autonomy" while teachers' role is mainly to support and facilitate the learning process [21] (p. 761). However, it is sometimes seen that the issues to solve are first described by teachers even though students are expected to be engaged in the problem-solving process by using their own knowledge and specializations (e.g., [27]). Some programs were activity based, like organizing an outdoor program to promote ESD [25], or a summer camp to provide ESD and build sound relationships between communities [26].

In efforts to assess the effectiveness of teacher education, it was common among the programs not only to introduce pre-service teachers to the teaching method to foster students' competencies contributing to ESD, but also to introduce the basic values and lifestyles of sustainable development. Teacher education for sustainable development tended to feature interactive pedagogies, e.g., group discussion and experiential learning (hazard mapping and creating teaching materials) [28]. In contrast, some of the articles explored the relationship between certain in-school factors (e.g., teachers' knowledge and their introduction of ESD into the curriculum), with the implication being that these publications did not look at the implementation of a particular intervention.

Duration: The duration of the programs varied from very short (e.g., one day workshop) to long (e.g., one semester), though many of the articles focused on programs lasting more than 2 weeks. There are also longitudinal studies which looked at the effectiveness of ESD programs implemented over a number of years.

Implementer: The majority of the programs were implemented by teachers (64%) in various educational contexts such as schools and universities while some programs were implemented by others, such as researchers and graduate students (32%) or NGO employees (4%), as shown in Figure 3.
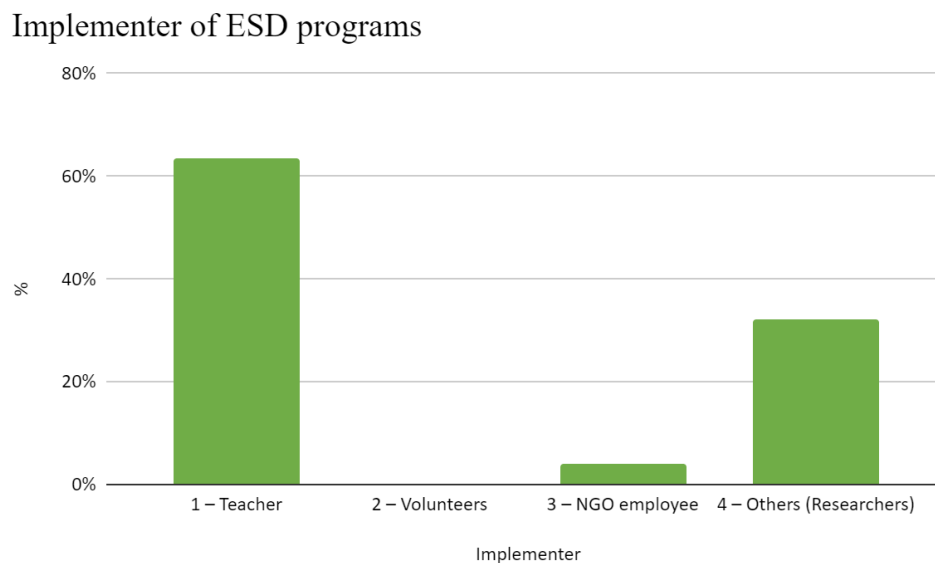
Implementer of ESD programs

Figure 3. The Implementers of ESD Programs.

Transformative orientation: Nearly half of the ESD programs and initiatives studied (55%) sought to be transformative. Among articles focused on teacher education programs, some of them investigated change in teachers' perceptions of sustainable development or ESD while some others were interested in how teachers' knowledge and sense of moral obligations affect ESD teaching or curriculum development. There was often the assumption that understanding ESD is an evolving process. In general, many of the programs aimed not only to increase student knowledge for sustainable development but also to raise awareness and promote students' behavior change. For instance, some programs aimed to transform students' behaviors to be environmentally friendly, e.g., changing daily habits to reduce consumption of water and energy (e.g., [21,27]).

Assessment: Evaluations of the ESD programs were composed of both quantitative (46%) and qualitative research methods (36%), as seen in Figure 4. Among the quantitative research methods, as Figure 5 shows, 43% were quasi- experimental, 7% were experimental, and 50% were neither of them. Program participants were usually asked to answer the questionnaires with Likert scales. The questionnaires included items to identify how participants' knowledge, attitudes and perceptions toward ESD changed. In the assessment of teacher education programs, the participants were additionally asked through Likert-type questions about their opinion, perception and attitudes toward ESD, as well as their conceptualization and approaches to teaching ESD. Sometimes in the questionnaire, there was also an option provided for additional comments [21]. In qualitative research methods, semi-structured interviews and focus group discussions were mainly used. Questions were often centered on participants' awareness of ESD, teacher perspectives, knowledge, and understanding of ESD in addition to beliefs and opinions regarding sustainable development, and how participants were affected by ESD initiatives, experiences or programs. Student diaries, personal reports, observations of classroom interactions, exams, and reflections were also used.
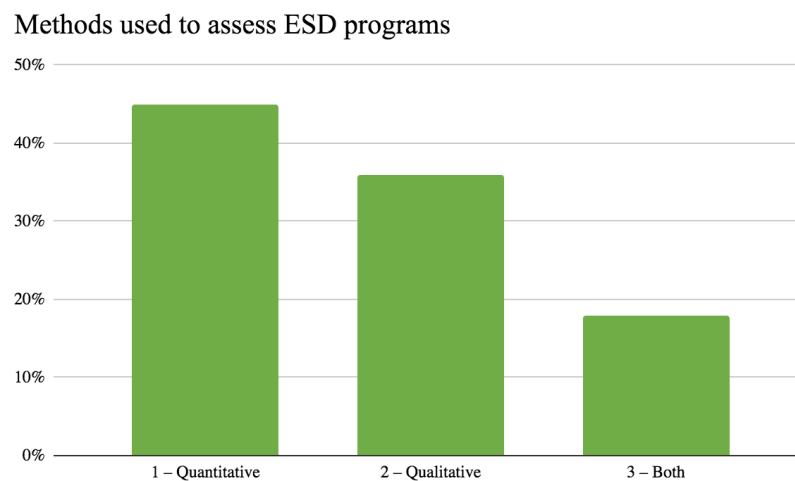
Methods used to assess ESD programs

Figure 4. Methods Used to Evaluate ESD Programs.

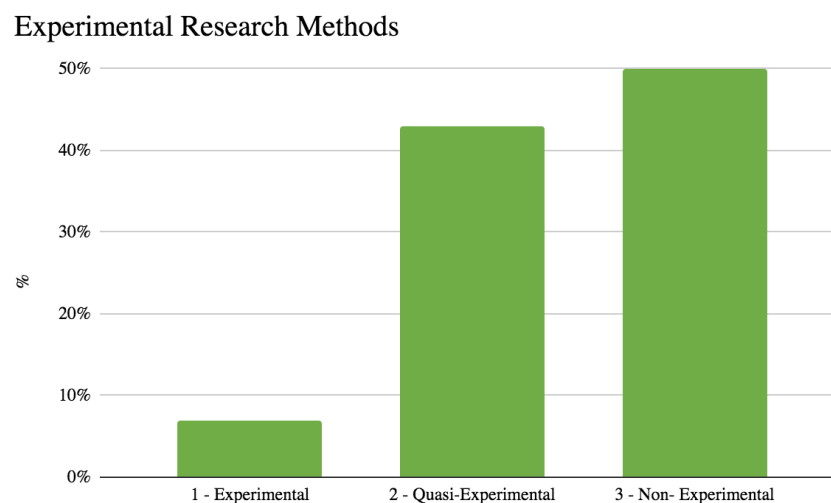Experimental Research Methods

Figure 5. Percentage of ESD Studies by Experimental Design.

Strengths and weaknesses of assessment approaches: The strengths of the experimental research mainly lie in the large sample of program participants in the treatment group. Dividing ESD-learning-outcome scores by several main categories was helpful to understand in which specific areas students increased or decreased their score. When the study assesses various kinds of ESD-related courses and activities without such categorization, relationships between the outcomes and specific course or activity becomes unclear. As for the weakness of the quantitative research, it does not reveal the mechanisms behind this change [29]. For instance, how in-school factors of the program contributed to the ESD learning outcomes was not clear from the survey results. Also, challenges stem from the difficulty of defining outcomes and measuring success. As Sağdıç and Sahin [30] noted, some articles simply claim "success" as an outcome of the program without providing a clear definition of success and while indicators of "success" are not well developed.

As for the strengths of qualitative research, participants' opinions and comments added to the survey greatly enhanced the understanding of why participants scored various competencies in the way they did. Interviews with the participants after the survey would have allowed them to further explain what they wrote in the report. However, the feelings of participants about their experience of the ESD program, which were often characterized using the results of semi-structured interviews, would not be enough to evaluate learning outcomes and to prove the effects of a program. For instance, evaluation of long-term impact and behavior change of the participants should be subject to more

attention in program evaluation. To identify the long-term effects of ESD, such as sustainable behavior change, longitudinal studies would be helpful, as Brody and Ryu [27] suggest in their article. Whether quantitative or qualitative, self-reports cannot escape from self-bias. Thus, behavioral observation may have been helpful.

Implementation: Both student- focused programs and teacher-focused programs had challenges with implementation. The main factors hampering implementation were teaching methodology and teachers' capacity. For instance, the research of Kieu et al. [31] revealed that teaching methods were one of the main reasons for student negative feedback toward ESD at the university level. Students claimed the courses were boring due to the lack of interactive teaching and learning, excessive content and poor facilities. The authors pointed out that there remains a large gap between education reform to replace top-down teaching by more interactive pedagogies and the current status quo. Some cases suggested that even though teachers attempted to use interactive pedagogies, their efforts have not yet lead to a successful result. For instance, the research of Kaya [32] focused on the case of using an innovative teaching technique (i.e., the six thinking hats technique based on using six different thinking perspectives), but some students still characterized the courses as tiring and boring in their feedback. This case implies that interactive pedagogy remains a challenge among teachers.

In NGO programs that partner with universities, the factors hampering the program were found to be "overly ambitious course schedules, a lack of supervision during the follow-up activities, lengthy lectures and misleading trainee recruitment" [28] (p. 160). For instance, in some programs which did not coordinate their class schedules with those of the university, some students had to miss university classes without permission from their faculty [28].

In other cases, the authors pointed out the selection of language as a problematic aspect when the participants were from different language areas [26]. In the words of Kadis and Avraamidou [26], "even though there were only a few cases of individuals who were not fluent speakers of English, some problems of miscommunication did occur. Language was also a barrier in expressing personal feelings and having more meaningful conversations" [26] (p. 70).

Studies also reported other challenges and constraints which affected the implementation of sustainable development education programs, initiatives, and goals. Pre-service teacher education that prioritizes ESD, ongoing in-service teacher training and support related to the practical use of ESD tools, in addition to teachers' perceptions of the feasibility of implementing ESD into lesson times, may influence the implementation of ESD [24,33]. In one study, the amount of time and school support necessary to integrate new teaching methods and content related to ESD hindered teachers' implementation of an ESD toolkit [33]. Other studies found that the limited duration of ESD projects and programs may also play an important role in the extent to which ESD is integrated into future teaching and learning [24,25,34].

Outcomes: Most of the program evaluations included in the articles demonstrated or claimed positive effects on student/teacher learning related to ESD. Among these, five studies focused on teaching and learning assessment of ESD demonstrated a statistically significant effect [22,27,32,35,36], while three other studies focused on teacher education in the areas of ESD demonstrated the same [29,33,37]. For instance, some of these studies found that ESD courses strongly impacted participants' positive beliefs, norms and attitudes towards sustainable development [29,37]. Participant consciousness of nature, awareness of the need to save natural resources, more sustainable daily practices were also seen as positive outcomes. Core sustainability competencies such as systemic thinking, futures thinking, values thinking, and action-orientation have been also fostered. Teacher education for ESD showed a short-term increase in willingness and moral obligation to engage with the issue of sustainable development and to teach students with scientifically supported and ethically sound knowledge in ESD [29]. Similarly, the evaluation of ESD for students revealed its positive impact on the degree to which students make behavioral choices in a sustainable manner [27].

There were also more specific positive outcomes indicated by some programs, such as understanding of the concept of sustainable development [21] and creating positive feelings about

community members and gaining knowledge about the nature of their community [26]. It was interesting to find that a program which succeeded in increasing participants' sustainability-related competencies did not necessarily increase their ESD teaching competencies [28]. In this program, the participants were provided with the opportunity for practical experiences on integrating disaster risk reduction into curricula and creating teaching materials. However, the author explained that this was mainly because the program design was not specifically for pre-service teachers [28]. It is also noteworthy that one assessment suggested that ESD-related competencies were developed differently among university students according to gender, disciplinary, affiliation and age [36]. For instance, as a result of the same ESD course, interpersonal competencies improved more among female students than male students, and normative orientation improved only among younger students [36].

Several studies reported positive learning outcomes from the implementation of ESD and global citizenship programs, especially when teachers are provided with professional development and training, ongoing support, and resources. In studies that focused on the efforts of teaching and learning of ESD, program outcomes indicated positive effects on student learning related to ESD and an increase in teachers' and students' understanding of and sensitivity toward ESD [22,34]. Some studies also reported improved student learning outcomes from teacher education coursework taken at the graduate and undergraduate levels, such as enhanced knowledge of ESD, systems thinking, decision making abilities, self-awareness, critical thinking, civic involvement, global competency and increased personal responsibility to be informed, use voice, and take action on ESD related issues [25,30,38].

Implications: Throughout the literature, there are many useful policy and pedagogical implications for further implementation of ESD. Regarding student-focused programs, many studies implied that teachers play a very important role in influencing future global citizens. As one study suggested, the ESD curriculum, supported by the national government, constitutes a crucial part of the modern education system in Sweden—a successful case. Some literature also suggests that, in order to be successful, implementation of ESD inside the classroom should aim to raise awareness of issues in the context of sustainability and sustainable development and that such awareness and consciousness should ultimately compel and motivate students to act and engage outside the classroom, as global citizens who meaningfully contribute to global issues [22,30]. Regarding teacher-focused programs, many authors emphasized the crucial role of higher education institutions. For instance, Andersson et al. [29] claim that teacher education programs that focus on ESD not only have the potential but also have the responsibility to provide future generations with knowledge and tools on tackling sustainable development issues.

For providing effective ESD, the role of NGOs was also highlighted in some articles. For instance, Kieu and Singer's [28] research in Vietnam revealed that students in a focus group saw NGOs as crucial educators in non-formal ESD. These authors consequently argue in favor of "using higher education such as teacher education to catalyze the necessary norm-based and behavioral changes concerning sustainable development in the next generation" [28] (p. 5147). NGOS can contribute to these efforts by fundraising, research funding, future employment, and reviewing curriculum. It is therefore suggested for universities to be more active in strengthening partnership with NGOs. At the same time, higher education's responsibility is to develop sustainable development curriculum and provide graduate-level courses on sustainable development.

However, transferring teachers' learning of ESD to classroom is another challenge. The study of Qablan et al. [39] shows that even though pre-service teachers' own moral attitudes are affected by the ESD course, they claim not to transfer these norms to students due to their beliefs against indoctrination. Their study implies that teachers felt more comfortable presenting objective facts but not giving students room to reflect or influence their choice [39]. Such teacher orientations represent a clear challenge to the achievement of the SDGs going forward.

At the university level, Zachariou and Valanides [25] suggest that teacher education programs need to be re-cultured to ensure that "future teachers see the benefits and possibilities of ESD" (p. 200). Spahiu and Lindemann-Matthies [33] write that supportive pre-service teacher education and in-service

teacher training may increase teachers' confidence in integrating and implementing ESD, and may also increase teachers' capacity to create their own locally relevant ESD program and projects (p. 8062). Finally, Sims and Falkenberg [24] suggest inclusive collaboration with teachers in addition to supportive leadership may help the process of "reorienting teacher education towards sustainability" (p. 12).

4.1.2. Cultural Diversity

Setting: A large body of literature on appreciation of cultural diversity tends to focus on formal education. As Figures 6 and 7 show, while most of the programs were implemented at university level [40–45], only a handful of programs were conducted in a traditional classroom, mainly focused on primary schools [46].
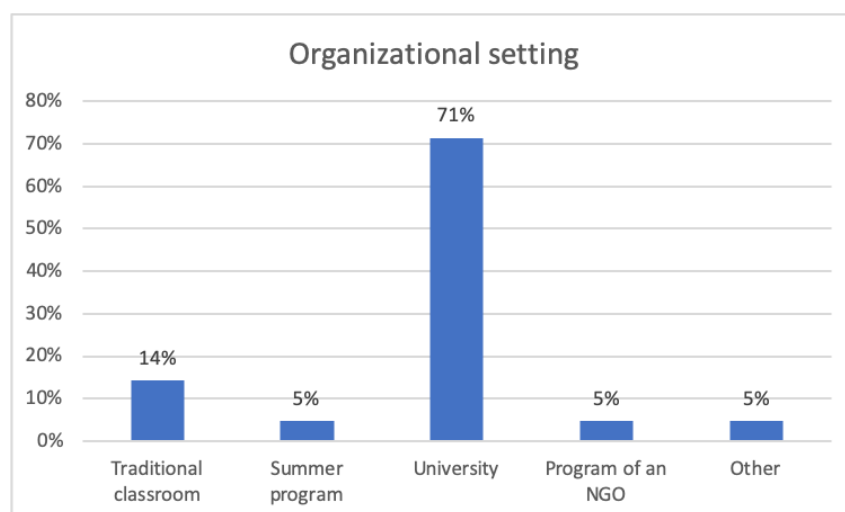

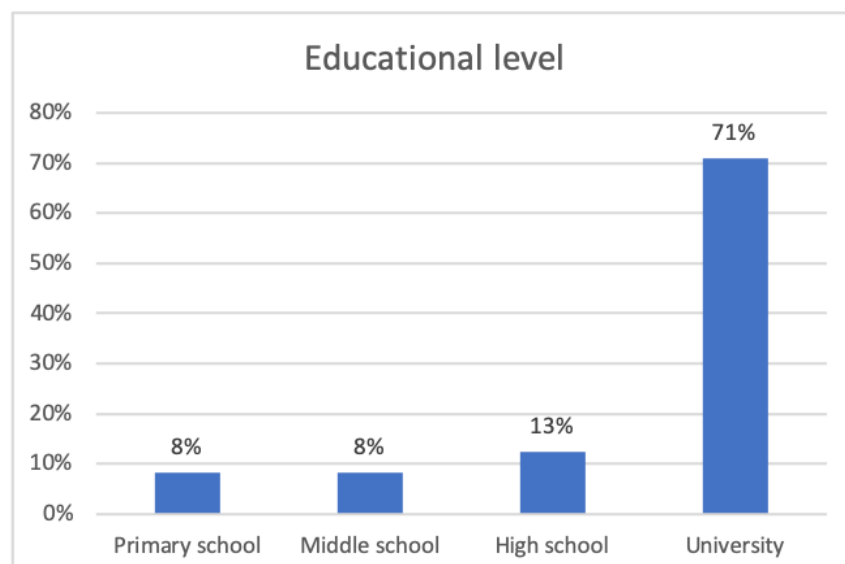**Figure 6.** Organizational Setting where Cultural Diversity Programs were Implemented.

Figure 7. Educational Level of Cultural Diversity Programs.

Geographically, diversity programs tended to be implemented in either North America [40,41,43,44,46], or in Europe [45]. One program was implemented in Germany and the US in partnership between two universities [42], while another focused on the United States and South Africa [47]. Other countries that were noted to have had diversity programs were Ireland, Cyprus, Italy, Poland, and the United Kingdom, among others [48,49].

Objective: The goals and objectives of the programs ranged from immediate to far-reaching impacts on participants' understanding, awareness and attitudes towards diversity, though diversity was defined differently across different studies. With the diversity component infused in the curricula, most programs aimed to promote greater appreciation of cultural diversity on school campus as well as in the wider community [40,41,43].

Kubal et al. [40] refer to internal diversity pertinent to American society. Students should get exposed to different narratives along the lines of race, class, gender, ethnicity, age, sexual orientation, religion, and other social dimensions. Kvam, Considine and Palmeri [41] are concerned about the way students communicate about diversity in and outside of the classroom, since communication is inherently power-laden. Scott and Sims [43] take diversity outside of the classroom. Claiming that students lack competences for workforce diversity, they evaluate two impactful programs (Diverse Voices Conference (DVC) and Diverse Student Scholars (DSS) that let students transform their understanding of others from different identities and of workforce diversity.

One concept related to diversity that received significant attention was the idea of global citizenship. Hunt [48] specifically states, "Global citizenship education is expected to be transformative, building knowledge skills, values and attitudes that learners need to be able to contribute to a more inclusive, just and peaceful world" [48] (p. 10). In this vein, Sperandio, Grudzinski-Hall and Stewart-Gambino [44] describe a program that focuses on global citizenship education that provided students with the tools—such as information, experiences and perspectives—necessary to think consciously about their own responsibilities and perspectives, and discussed "global citizenship" in relation to the idea that "today's students will live in a diverse, global, and interconnected world whether they want to or not, whether they necessarily know it or not" [44] (p. 14). As these authors write, this idea of global citizenship leads to a series of important questions that educational programs must consider:

> What does it mean to ask of any student, regardless of major or intended career paths, that they become a global citizen? What is the difference between being a person who knows about non-U.S. cultures or languages and a global citizen? Is there a specific content, ideological perspective, or set of beliefs that are inherent in a citizen? What do students need in order to be able to determine, for themselves, their own relationship to the world? [44] (p. 14)

On the other hand, diversity programs that were implemented among pre-service and in-service teachers were geared to foster the development of intercultural competence [42], to prepare teachers to work effectively with minority and low-income students [46], and to improve knowledge of discrimination by learning about the importance of differential treatment in achieving equal opportunities [45].

Leh, Grau and Guiseppe [42] describe intercultural competence based on Byram's (1997) model of intercultural communicative competence as it relates to "students' perceptions of culture after working as part of a multicultural and diverse team" [42] (p. 99). Intercultural competence includes knowledge about our own and other cultures, attitudes (e.g., curiosity, openness and respect towards other cultures) and skills (e.g., ability to interact and understand individuals from other cultures). With increased diversity in classroom demographics, this type of competence has become important to foster among pre-service teachers.

Youngs [46] and Turnsek [45] talk about diversity that is based on an anti-bias approach among teachers. Both authors argue that teachers are influenced by their beliefs and teaching experiences. Youngs [46] thinks that diversity should be an integral part in preparing teachers to work with students of various cultural backgrounds. Turnsek's [45] type of diversity can be described as proactive, value-based and activist. Teachers should be able to think critically to recognize the inequalities generated by power structures in society. As such, teachers should consciously reflect on their belief systems towards others. As can be seen, there are a variety of approaches to diversity across the studies retained.

Description: Some of the programs aimed to expose and engage students with speakers and groups from diverse cultural backgrounds within the community [40,41,43]. Kubal et al. [40] describe an artist in residency program. By inviting artists as guest speakers, race and ethnicity classes were developed around topics of immigration, assimilation and pluralism, prejudice and discrimination, and movement resistance. Artists addressed some of these issues by describing how they interpret their own ethnic experiences through art. Further, as noted in Scott and Sims's [43] study of University students in the United States and Germany, music, poetry, and dance can bring students, scholars, and the community closer together in a forum that supports human diversity and encourages dialogue on real world diversity issues among the community members.

Other programs utilized educational exchanges as a way of exposing students and teachers to real-world diversity. Somers [49] discusses Suas, an Irish-based INGO, festival that promoted educational opportunities for young people from disadvantaged settings and aimed to inspire, engage and educate young students as global citizens, as well as attempted to foster collaboration on projects focused on social change. Leh, Grau and Guiseppe [42] present a university exchange program where students from the US and Germany learned from each other firsthand through an online discussion of culture and language teaching, as well as in-person during a 21-day trip abroad. This excursion served as an educational field experience with visits to German elementary schools. In addition, the online course was accompanied by reflective tasks, such as surveys, debriefings and reflection papers regarding the relevance of the project experience and the effects of the project on the participant's personal and professional development. Sperandio, Grudzinski-Hall, and Stewart-Gambino [44] talk about the Global Citizenship Program (GCP) that engaged students through practical and experiential learning such as study abroad, summer opportunities to work with NGOs, as well as faculty and student exchanges. The GCP sought to provide students with the tools, such as information, experiences and perspectives necessary to think consciously about their own responsibilities and perspectives as global citizens.

The diversity programs among prospective teachers and in-service teachers focused on, both, independent study of diversity topics as well as experiential learning. For example, Turnsek [45] describes the Antidiscrimination and Diversity training of a total of 120 h. The first part of the program targeted participants' perceptions on the topic, followed by the exploration of written and spoken messages that influenced their thinking about minority groups. In Youngs [46], Teaching for Urban Contexts (TUC) was an experimental program that trained prospective teachers. The TUC program employed several strategies to prepare teachers to work with diverse populations, including readings on teachers who have been successful with minority students, and socio-emotional self-reflection. Some courses provided prospective teachers with strategies for learning about their students' cultural backgrounds and prior learning experiences. Finally, program participants did practical training in schools serving minority, low-income students, accompanied with field experiences in their students' communities. As will be further discussed, the various programs assessed in the literature tend to be experiential in nature and do not seem to lend themselves to easy assessment, nor to easy replicability for the purpose of achieving the SDGs.

Duration: The duration of cultural diversity programs varies greatly, as seen in Figure 8. While some of the programs were implemented over a short period of time, ranging from one day to five weeks [40,42,43], other programs took place over a duration of several months [44–46] or even years [50,51].
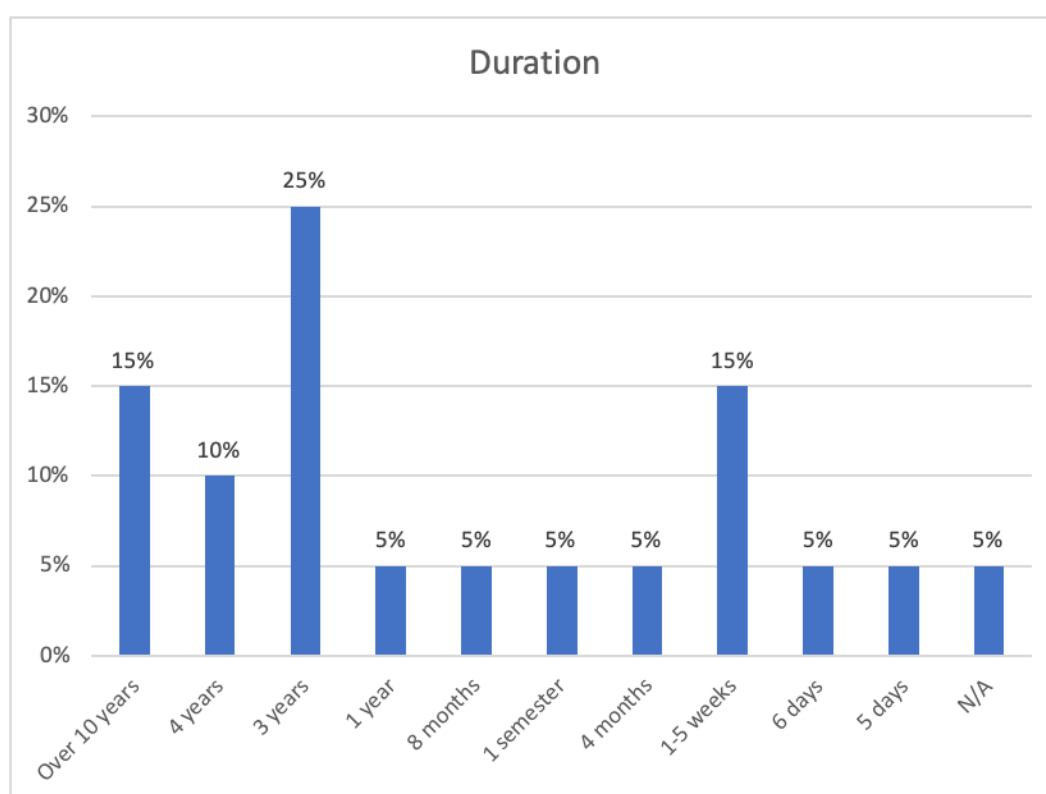
Figure 8. Duration of Cultural Diversity Programs.

Implementer: Figure 9 shows that the vast majority of the programs were implemented by university professors [40,41,44,45], or by primary school teachers [46], though in some studies the programs were carried out by the researchers themselves [42,43].
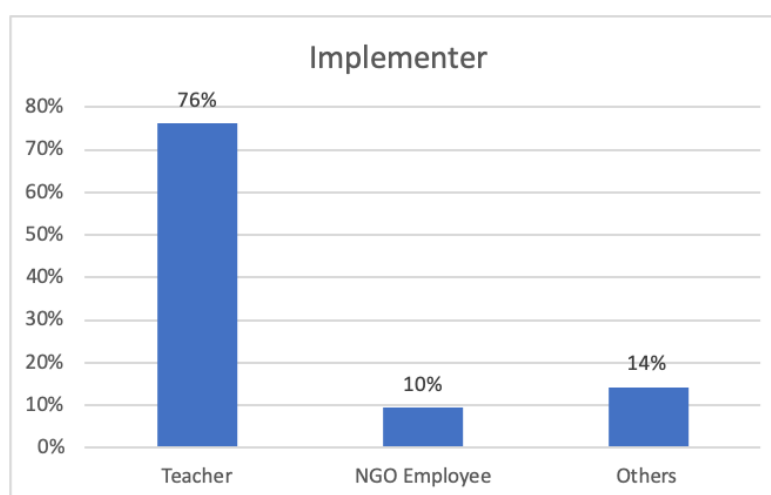

Figure 9. The Implementers of Cultural Diversity Programs.

Transformative orientation: While most literature does not focus on the impact of diversity programs, a few studies note the transformative nature that such programs may have on participants. Youngs [46] points out the importance of exposing pre-service teachers to the political and historical context of marginalized groups and the way they have been treated in the educational setting. Scott and Sims [43] talk about the annual Diverse Voices Conference (DVC) that provides higher education students, renowned scholars, professionals and community members an opportunity to speak out

and to engage in dialogue on diversity issues. The goal of the student-centered DVC is to expand internationally. This would give an opportunity to students who present and attend the conference to be "more prepared to live, work and play more respectfully and productively in a multicultural world" [43] (p. 114). Likewise, Sperandio, Grudzinski-Hall and Stewart-Gambino [44] state that participants of Lehigh University's Global Citizenship Program, a program that was designed to develop tools to understand global responsibilities and for operating in a global environment, have been equipped with important information, experiences and perspectives that are necessary to take on the role of responsible global citizens.

Some studies focus on raising awareness while other studies specifically state they focused on transforming students' opinions or perspectives. A two-part exercise at West Chester University in Pennsylvania that focused on general value questions and involvement in community civic activities attempted to "raise awareness of the negative influence of oppression and stimulate interest in seeking greater knowledge about other cultures" [52] (p. 160). Nagengast [50] notes that in a study abroad program from Juniata College in Huntington, Pennsylvania, the courses were designed to change student perspectives and self-awareness with regards to intercultural sensitivity by focusing on the professor's impact on student attitudes on openness to diversity and global citizenship. Castellanos and Cole [53] argue that exposing students to diversity is not enough and that course content should strive to strengthen the students' community and to promote civic engagement. In a festival's learning events that mainly focused on workshops to examine how to critically examine media narratives and debates with a media focus [49], the goals were to help equip students with the skills and understanding of engaging with social media and global development issues by focusing on understanding different diverse stories that exist in the media narrative of the European "refugee crisis." Thus, many diversity-focused programs have a transformative orientation in that they seek to encourage students' development when it comes to their sensitivity to, understanding of, and action on diversity-related issues.

Assessment: **Figure 10 shows that** both quantitative and qualitative assessment tools were used to understand the associated outcomes to the appreciation of cultural diversity. Qualitative data mostly revolved around curriculum analysis, in-depth interviews, focus groups and observations with students, teachers or education professionals to capture participants experience and/or practice [41,46,54]. Other qualitative methods were used to capture participants' learning experience. For instance, in Kvam et al. [41] examination of self-reflective essays and focus-group interviews on university students' perceptions of diversity- focused learning, focus groups served as an opportunity for students to compare and contrast one another's perspectives. Additionally, students wrote self-reflective essays about each of the seven expected learning outcomes for their capstone portfolios for graduation. These essays, together with focus-group interviews conducted with current and former students, comprised the corpus of data for this study. In Youngs [46], teachers were asked to describe their backgrounds, motives for the teaching profession, and their primary goals as teachers in order to determine the impact of diversity programs. In Ball's [47] cross-national study that aimed to address how teachers can become effective when teaching students that are culturally and linguistically diverse, over one hundred oral and written texts were collected from American and South African teachers, including transcripts of classroom discussions, journal entries and reflection papers.
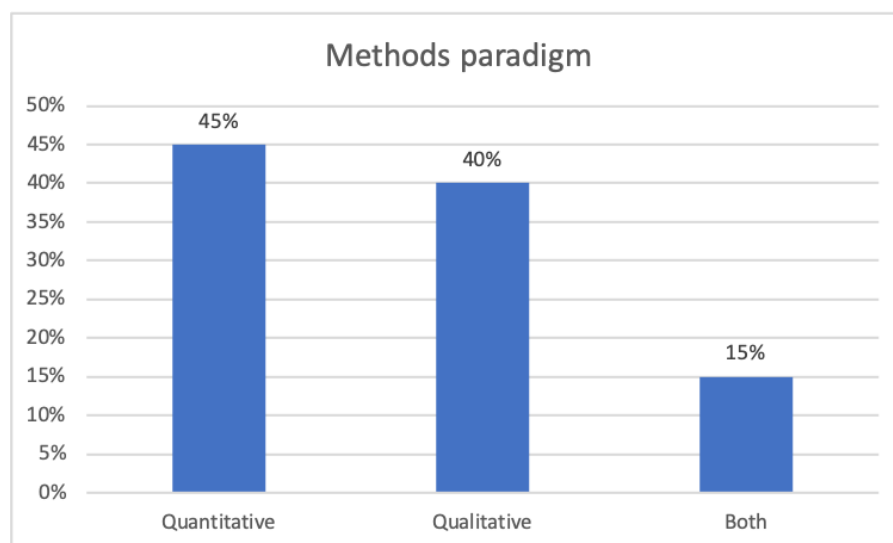
Figure 10. Methods Used to Evaluate Cultural Diversity Programs.

Quantitative data (see Figure 11) were often collected in the form of Likert scale surveys [40–43,45,47] and reflected both student opinions and educator opinions about different programs. These surveys were administered both before and/or after program implementation. Leh, Grau and Guiseppe's [42] study focused on pre-service teachers' intercultural competence and understanding of diversity with American and German undergraduate students, with students from an American university completing open-ended pre-trip surveys. Students completed post-trip open-ended surveys and written reflections that aimed to assess cultural preconceptions and the effectiveness of the project methods regarding the use of technology to facilitate multicultural connections. In Turnsek's study [45] about antidiscrimination and diversity training (ADT) among prospective teachers a pre-program survey was administered to experimental and control groups to determine which independent variables are predictors of the respondents' knowledge and beliefs. The ADT was based on an anti-bias approach. To recognize the inequalities in the society, teachers should consciously reflect on their belief systems towards others. Out of all of the studies examined, there were only a few available quantitative studies that were longitudinal in nature (i.e., that gathered data over multiple years) and which included more than a few participants who had engaged in diversity programs [40,43].
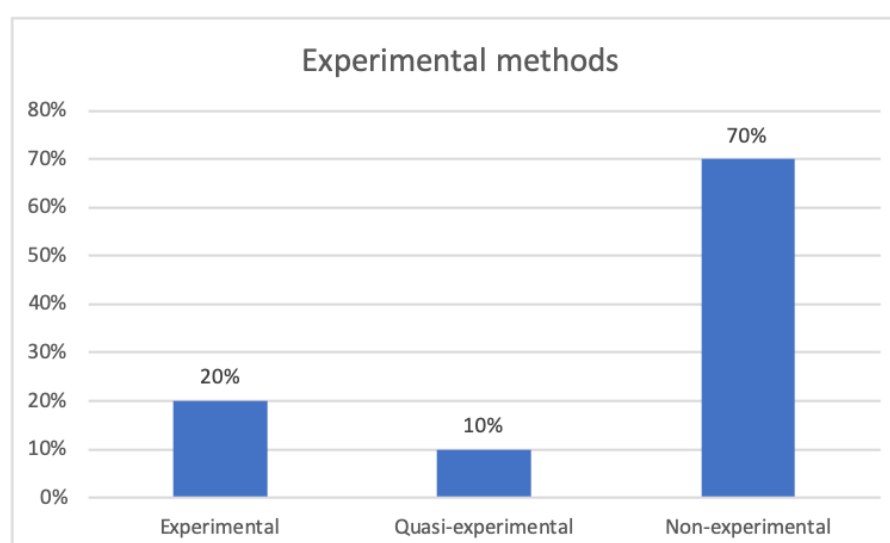
Figure 11. Percentage of Cultural Diversity Studies by Experimental Design.

Strengths and weaknesses of the assessment approaches: As it is commonly found, self-assessment instruments may not necessarily report actual student or teacher characteristics. Also, it is important to look at the characteristics of selected participants that may limit the results of the program evaluation. For example, in Youngs [46], all four of the teacher participants in the study were white women, and all were in their first or second year of teaching in schools that serve significant numbers of minority, low-income students. Thus, this study and information may be quite narrow and not generalizable with regards to diversity or global citizenship education. For programs that administered surveys over multiple years [40,43], the strength of the instrument lies in the longevity.

Unlike Turnsek's [45] study that utilized a pre-program survey to determine which independent variables are predictors of the respondents' knowledge and beliefs, most programs did not have information on pre-exposure to diversity issues. As noted in Kubal et al. [40], when studying pre-service teachers, "future research should examine the effects of academic major, pre-exposure, and speaker upon student learning outcomes" [40] (p. 452).

Some studies suffered from a small sample size and thus the results cannot be generalized to the larger teacher or student population. Other times, the tool that was used for the study was not formally evaluated. Often times, studies did not include a description or a link to the survey questions, so it is difficult to determine the validity of the study. Some studies did not explicitly describe the conditions that the surveys were taken under. Some studies gave surveys that were even taken remotely [48], while other studies did not offer any demographic information on the students or teachers they were examining [50]. All of these factors make it difficult to judge the assessment tool.

Bias in multiple forms is also an issue that should be examined. In some cases, specific programs, like UNICEF UK's Rights Respecting Schools Award (RRSA), were heavily promoted in the article by the authors [51]. Self-reporting on a topic like "empathy" may bias the participants to say what they think they are supposed to say [55]. Geographically, the overwhelming majority of studies came from countries in Europe and in North America, and there was almost zero representation of Asian, African, South American or Middle Eastern countries. This ultimately led to a very specific idea of "diversity" and "global citizenship education" that mainly revolves around "Western" notions of diversity and what it means to be a "global citizen." In addition, those who take part in such programs may be more open-minded and therefore inclined to learn about such issues, which may make it hard to interpret the effect of these programs that try to change perceptions and attitudes of a wider community [44,51]. These issues should be taken into account when designing and assessing diversity programs for students around the world.

Implementation: The implementation of diversity programs in formal education is often either incorporated in the existing curriculum, or offered in the form of trainings and workshops that may be accessible only to a small number of participants. The limitations of diversity program implementation may include financial constraints, political stance and leadership initiatives that may or may not recognize the importance of such programs in formal education. For example, Sperandio, Grudzinski-Hall and Stewart-Gambino [44] argue that a lot of the work for such programs is political, and is made harder when faculty are asked to debate, design and implement assessments for a new diversity-focused program. This is because, when defining outcomes, it is impossible for the faculty committee to not have a stance in and toward the world.

Elsewhere, Kvam et al. [41] stress the importance of including students in the disciplinary dialogue rather than trying to resolve the diversity debate for the students. Findings show that the term *diversity* had multiple meanings within and across student essays and focus-group interviews, however, it primarily evolved around race and ethnicity. The meanings that students ascribed to diversity were all rooted in white privilege. Thus, students should be part of the exploratory process of uncovering what *diversity* truly means.

Some authors question whether diversity programs go far enough in their design and focus. With regards to study abroad programs and the increase in respect for local cultures, Nagengast [50] surmises that intense, immersive study abroad experience can make students tolerant or respectful of any and all cultural practices. Separately, Somers [49] critiques diversity programs where students have to watch films, noting, "To watch and listen is not enough. To like and share on social media is not enough. We have to empower students to take action, and that action may start with the simple act of meeting someone new in person or seeking out authentic new voices online." [49] (p. 135). For one study that was focused solely on empathy, the author notes that empathy is not the exclusive property of the interculturalists and laments the lack of focus on social justice, empowerment and peace education in the program [55].

Outcomes: The documented outcomes of diversity programs were often noted as positive with regards to the importance of incorporating a diversity component into curriculum, as well as part of the pre-service teacher trainings to facilitate a deeper understanding of cultural diversity in education. Both students and teachers who partook in educational programs that incorporated appreciation of cultural diversity showed an increase in participants' attitudes, awareness and understanding of the importance of multiculturalism and diversity. Several programs improved participants' understanding and ability to identify discrimination as the program caused them to examine their own cultural biases [40,45,46]. It should be noted, however, that only 20% of the studies claimed statistically significant outcomes [45,48,53,55], of which only the study by Castellanos and Cole [53] applied experimental methods.

It is also possible to highlight individual studies. Although many programs evaluated are interesting, some seem more relevant in their potential to inform strategies to achieve and evaluate SDG4.7. These examples include the following:

- A study done by Bell [56] to evaluate the longitudinal effects of an in-school program addressing cultural diversity on the self-perception of student teachers with regards to their interpersonal competency found that there were large gains in teacher–student relationships, which focused on trustworthiness, comfort level, stereotypes of minority populations, and multiculturalism.
- O'Neal's study [52] focused on helping students to appreciate diversity and to gain an understanding of multiple cultural backgrounds and found that the program self-report evaluation consistently showed high sensitivity to diversity.
- Castellanos and Cole [53] studied how diversity course content influenced students' civic engagement and found that diversity courses that emphasize multicultural competence positively influence students regardless of race, and courses that emphasized society equity had a great impact on students of color.

- Sebba and Robinson [51] found that the UNICEF UK's Rights Respecting Schools Award (RRSA) had a profound impact on the majority of the schools involved in the program and that children in the program are more likely to acquire identities as active citizens and that students developed more positive attitudes toward diversity.
- Carrell's study [55] noted that when cultural diversity was added to the communication curriculum, there was a strong impact on students' empathy.
- Kvam et al. [41] found that most university students described diversity as something that they bring to communicative encounters, rather than as socially constructed within complex interactions embedded within social systems. For example, students described the need to open one's eyes/mind to different experiences, move outside of one's comfort zone, find common ground, avoid offensive behaviors, and confront and challenge assumptions. Students saw finding common ground as a skill for navigating diverse interactions, particularly those enacted in public-speaking contexts.
- Leh et al. [42]: Pre- and post-surveys and reflective essays indicated that that online intercultural exchange reduced concerns before meeting face-to-face and the process successfully facilitated a deeper understanding of cultural diversity in education. Overall, results from both sites indicated greater comfort when initially meeting their culturally diverse peers, which were reflected in survey data and video data.

Although it is often noted that diversity programs were rather successful overall, this success may vary among participants [40, 45]. Variables such as age, gender, and discipline were key points of variation. For instance, Kubal et al. [40] found that older undergraduate students found the program more valuable than younger students. Castellanos and Cole [53] found that diversity courses that emphasized multicultural competence positively influenced students, regardless of race. However, courses that focused on societal equity had a greater impact on students of color.

Implications: The implications of these studies highlight the importance of incorporating diversity in school curriculum and teacher training by educating pre- and in-service teachers and students about diversity in order to ensure the development of tolerance and empathy, and to reduce prejudice and discrimination, among others [55]. The objectives of diversity programs should be clearly defined and need to provide students with the tools (e.g., information, experiences, and different perspectives) that will make them think about their own responsibilities in relation to issues in the world as global citizens. Sperandio, Grudzinski-Hall and Stewart-Gambino [44] argue that it is crucial to differentiate one's knowledge of cultural diversity from being knowledgeable about the world and act as a global citizen. As such, the objectives of diversity programs in educational institutions should incorporate the three core dimensions of the GCED as defined the United Nations—meaning the cognitive, socio-emotional, and behavioral dimensions—in order to encourage the acquisition of skills, values, attitudes and behaviors. In this literature review, most studies fail to do so. Some of the studies focused on raising awareness while other studies specifically state they focused on transforming students' opinions or perspectives.

Pre-service teaching programs ought to prepare teachers to work effectively with culturally diverse students in an ever more diverse classrooms across the world [42,45,46]. Teachers' work is complex and difficult, and the studies examined show that teachers look for and desire the space and understanding to work well with a diverse group of students in an international classroom. Programs that help teachers understand the needs and issues that minority students face ultimately help teachers create a successful plan for students that may historically be pushed to the margins by the curriculum or the make-up of the classroom. Educational leaders that create both formal and informal opportunities for multicultural experiences, as well as teachers that have a grasp of basic educational issues and teaching styles, can spend energy focusing on attitudes, perceptions, and behaviors that will encourage a more diverse educational environment and one that focuses on creating global citizens.

In addition, faculty-driven diversity initiatives may prove effective at accomplishing workforce diversity, student engagement and transformative learning [43]. Exchanges between universities from

different cultural backgrounds and countries help students to be more open-minded and more aware of a diverse set of issues and beliefs. Study abroad programs, that involve physical travel, also prove beneficial as students work toward understanding diversity and global citizenship. Training courses, either over a summer, during a semester or even over the course of a few years, were helpful for students to become more aware of the importance of diversity. Including students in the process of creating and implementing diversity programs is another way that students could be encouraged to grow with regards to diversity and global citizenship. These programs could be funded by educational institutions that are hoping to create a more diverse environment for learners of all backgrounds, and a more aware and conscious global citizen.

4.1.3. Peace Education

Setting: A large body of literature on peace education focuses on formal education. As seen in Figure 12, most of the programs were conducted in a traditional classroom setting, some at primary school [57–59], and others at secondary school level [60,61]. As shown in Figure 13, fewer programs were implemented at university level [62] or as an after-school activity in middle school and high school [63].

Geographically, more than half of the publications on peace education programs have origins in Europe [58,59,61,62] or in the US [57,63], while one assessment was implemented in Africa [60].
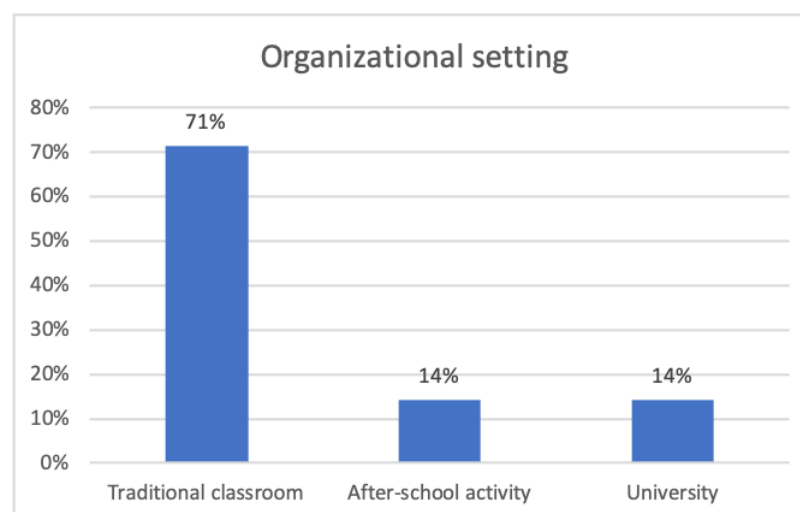

Figure 12. Organizational Setting where Peace Education Programs were Implemented.
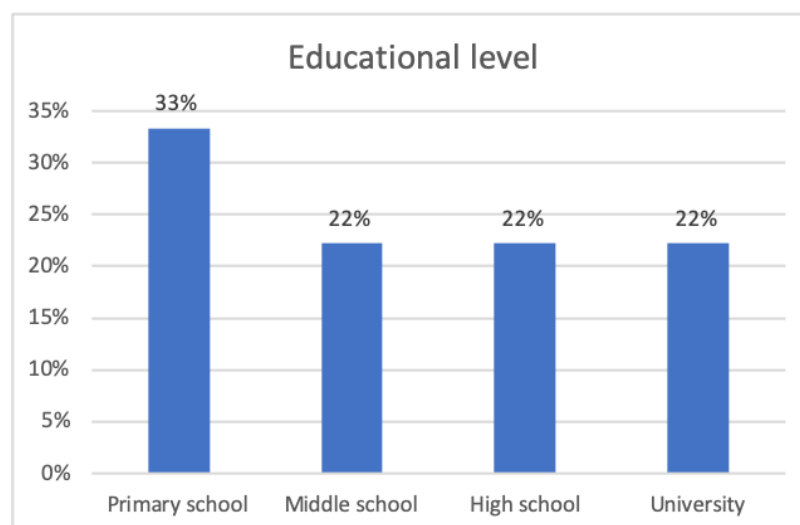
Figure 13. Educational Level of Peace Education Programs.

Objective: The objectives of peace education programs ranged from immediate to far-reaching impacts on participants' understanding of, awareness of and attitudes towards peace-building. However, peace education is defined in different terms depending on the national or regional contexts. The programs may pertain to either individual (e.g., [58,63]) or societal level (e.g., [60–62]). While some programs aimed to promote greater awareness, empathy and compassion among students [57,59] or among pre-service teachers [58,62], others were based on a peacekeeping strategy, which includes violence prevention and conflict resolution among youth for peaceful coexistence [60,61,63].

Sağkal et al. [61] discuss establishing and maintaining peace in schools in three different ways:

- Peacekeeping strategy: to end conflicts and violence through strength through power, pressure and discipline,
- Peacemaking strategy: to resolve conflicts in a constructive manner through conflict resolution and negotiation skills, and
- Peacebuilding strategy: to build a culture of peace through transforming the culture of violence into a culture of peace [61].

Sağkal et al. [61] argue that educators should not just focus on the peacekeeping, but rather utilize peacemaking and peacebuilding strategies which are more likely to lead to long-lasting peace.

In regard to pre-service teacher training, Coşkun [62] sees peace education as a means of peaceful co-existence among natives and refugees. It is educational institutions' responsibility to train teachers to contribute to societal peace by integrating peace education into the education system and the national curricula.

Description: Most of the programs aimed to expose students to the nature of peace and violence, and to teach youth the skills to resolve problems peacefully [59,61,63]. In Powers, Price-Johnson and Creative Research Associates [63], the In Pursuit of Peace Curriculum was designed to promote peace on the individual level. The main focus was to increase peaceful attitudes that would lead to violence prevention. In Baker [57], the objective of the World Peace game played by primary school children is to develop greater awareness of and a capacity for caring for others by building empathy and compassion. By being exposed to real-life problems, this game may prepare children for peaceful resolution of major world problems in the future. Basaran and Karakurt [58] argue that peace education is crucial to develop attitudes, skills and values among primary school students. Students will learn to develop violence handling skills. To achieve this, teachers need to be trained properly as they are normally the ones who deliver peace education to young learners in the classroom. Peace education in the context of Nigeria refers to peaceful and non-violent co-existence in the society as a whole. To tackle the ongoing

political, religious and tribal tensions and violent conflicts, Olowo [60] proposes peace education as part of the national curriculum, to include "training on the avoidance and management of violence, conflict, better human relationships, unity and internal cooperation among various tribes" [60] (p. 9). Learning about peacebuilding can also be fun. For example, primary schoolers in Baker's article [57] tackle complex global issues in the World Peace game that has these young students use communication and collaborative skills with fellow students and teachers. Building trust among players is another important component of this game.

Sağkal et al. [59] describe a 24-class-hour peace education program among students in two middle schools in Izmir, Turkey. The program was applied on the experimental group two hours per week and took 12 weeks total. The program was divided in four parts:

- Understanding the nature of peace and violence (7 h),
- Elements that prevent and support peace (5 h),
- Fundamental skills for a peaceful individual (7 h), and
- Negotiation as a conflict resolution method (5 h).

The peace education program included techniques, such as discussion, pair and group work, and role- playing.

Several articles highlight the importance of promoting a culture of peace and non-violence in teacher education [15,58,60,62]. Basaran and Karakurt [58] describe the In-Service Training Program with the Peace Education for Primary Teachers (BEHEP) among primary school teachers who participated in practical activities on the topics of peace and violence, media and peace, human rights, and decision and conflict approaches in teaching based on cooperation. By utilizing experimental learning, BEHEP was teaching strategies, methods and techniques in course planning. The activities included discovery strategy, cooperative teaching, discussion, case study and dramatization. BEHEP was an education process encouraging active participation, based on active and experimental learning. Activities were based on cooperation in small groups of two, three or four teachers.

Coşkun [62] provides an example of a lesson plan that integrates peace education by utilizing the objective writing matrix. In planning daily lessons, teacher candidates should identify the objectives of each activity (at least five targets). The objectives should cover cognitive, affective and psychomotor domains.

Duration: The duration of peace education programs varies greatly, seen in Figure 14. While some of the programs were implemented over a short period of time, ranging from one day to several weeks [57–59,61], other programs took place for several months [63], or have established a tradition to be implemented for a number of years [62].
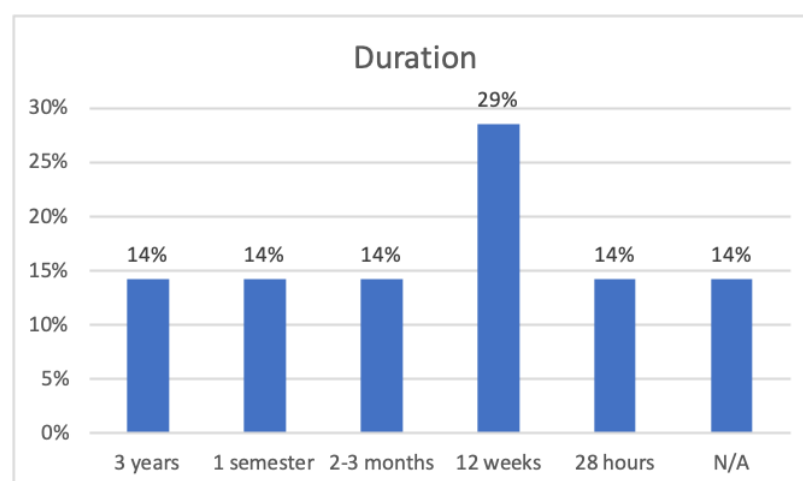

Figure 14. The Duration of Peace Education Programs.

Implementer. While the majority of the peace education programs were implemented by classroom teachers [57,58,61], some of the programs were carried out by national research agencies or ministries of education [59,62] as seen in Figure 15.
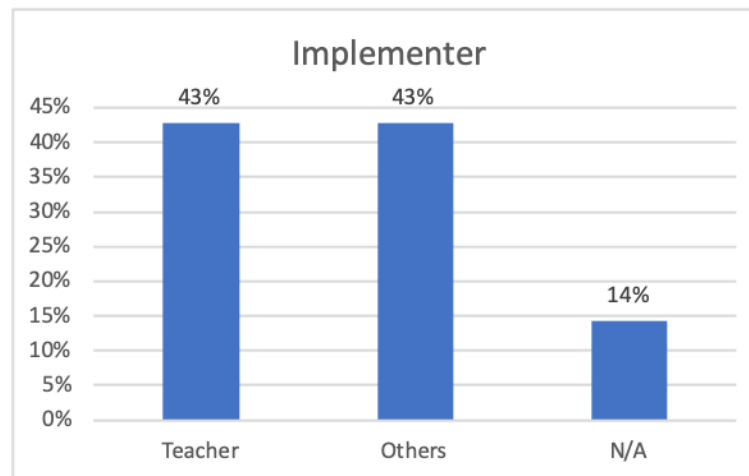

Figure 15. The Implementers of Peace Education Programs.

Transformative orientation: By promoting tolerance and empathy through educational practices and curriculum, peace education may contribute greatly to tranquility and peace in society. Most literature addresses the transformative effects that peace education may have on students and/or pre- and in-service teachers. Baker [57] states that through The World Peace game, students learn deeply and the newly acquired knowledge may be long-lasting. As a result, students may feel more motivated to save the world.

Some of the tools and measurement efforts sought to be transformative by suggesting individual actions and collective ways of engaging to address challenges faced by youth and adults as a result of conflict [61,62]. Because of its transformative potential, peace education, peace-building and reconciliation should be of particular interest to countries that deal with the refugee crisis or other types of conflict and violence [62,63].

Assessment: In most publications, quantitative and qualitative assessment tools were used to understand the associated outcomes of peace education and non-violence programs, seen in Figure 16. The vast majority of the programs utilized qualitative assessment in the form of interviews, lesson plan and document reviews, among others [58,61,62]. For example, Basaran and Karakurt [58] describe The In-Service Training Program with the theme of Peace Education for Primary Teachers (BEHEP) that utilized five different data collection tools:

- Interviews: 14-item semi-structured interviews among teachers were conducted;
- Peace Education concept forms: seven concept forms were developed and evaluated with three field experts to assess the influence of BEHEP implementation on conceptual knowledge of participants;
- Course plans: participants developed a course plan that would reflect their learning and their conceptual comprehension levels;
- Participant diaries: participants noted their views at the end of each training day;
- In-service training evaluation scales: BEHEP Evaluation Scale with two dimensions and 28 items on a five-point Likert scale examined participants' views of teaching process and acquisitions and their views of organization design.
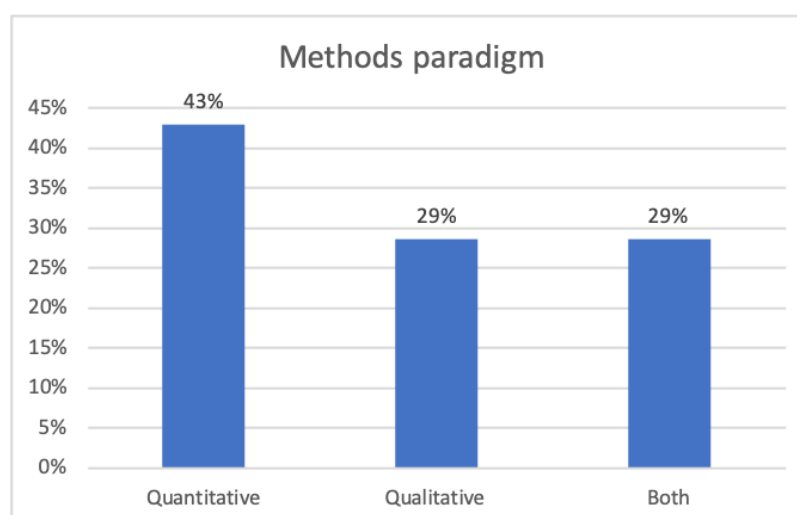
Figure 16. Methods Used to Evaluate Peace Education Programs.

Quantitative data (see Figure 17) were collected in the form of Likert scale surveys [59,60]. For example, Olowo [60] administered a 20-item questionnaire on a four-point scale to examine teachers' opinions on integrating peace education into Nigerian educational system in order to reduce violence and crime. Some of the programs administered pre- and post-surveys among program participants [61,63]. Sağkal et al.'s [61] study utilized mixed methods to examine the experiences of students who underwent peace education training. First, an aggression-focused pre- and post-test was conducted using a quasi-experimental design among 156 students in experimental and 106 students in control group. Second, 20 semi-structured interviews were conducted to better understand the students' experiences related to peace education.
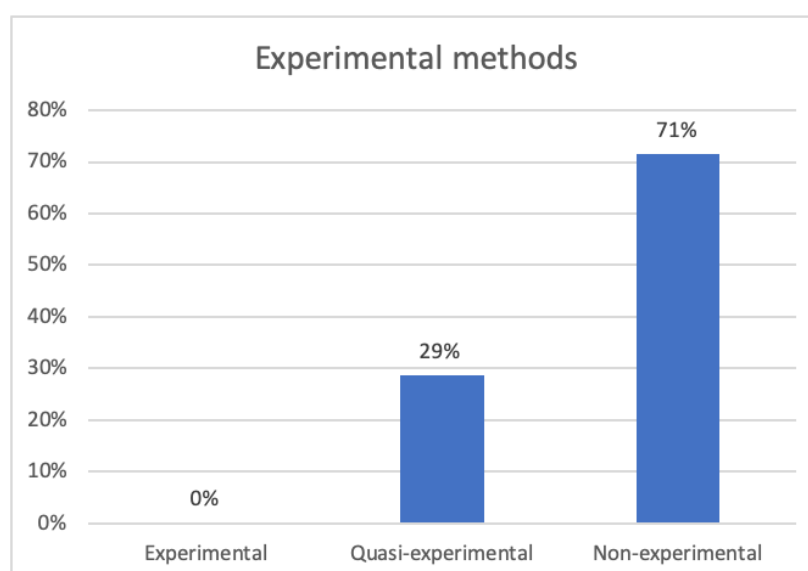

Figure 17. Percentage of Peace Education Studies by Experimental Design.

Availability. The research instruments that were used to assess these programs are largely unavailable. Olowo's [60] study on the effects of integrating peace education in the Nigerian education system includes the questionnaire with 50 items on a 5-point Likert scale. Similarly, the study by Powers, Price-Johnson and Creative Research Associates [63] provides the pre- and post-survey questions. The 3-point Likert scale survey ("agree", "undecided" and "disagree") covered eight main

areas (eight items) of the program's impact on youth. Students could also comment in the open-ended written section of the survey.

Strengths and weaknesses of the assessment approaches: Often times, the assessment of peace education is limited to the implementation in selected schools or to specific areas and populations that are prone to conflict and/or violence. For example, Basaran and Karakurt [58] argue that the primary school selected for their study is known for a large migrant student population, which often times causes increased possibility of conflicts. Thus, the results of this study should be interpreted with caution. Similarly, Sağkal, Türnüklü and Totan [61] note that program implementation and assessment is limited to two middle schools located in a lower socio-economic region in the city of Izmir in Turkey. As with all studies, any extrapolations should be made with caution.

Outcomes: The documented outcomes of peace education and non-violence programs were often noted as positive with regards to the importance of incorporating peace education into curriculum or teacher training. Some of the major outcomes include positive changes to students' knowledge, skills, values, and socio-emotional engagement or orientation (i.e., empathy, compassion and tolerance) with other groups [57–59]. However, it should be noted that only two (or 29%) of the studies claimed statistically significant outcomes [59,61], and both of them applied quasi-experimental methods. One of the two studies [59] shows that a 24-class-hour peace education program among middle schoolers was effective in increasing students' empathy levels. While the other quasi-experimental study is further discussed below, we note here that both studies claim that children can be taught to be peaceful if peace education is a specific issue of focus in the classroom.

Peace education may also lead to a positive change in behaviors—including better problem-solving skills, better anger management skills, and better communication skills, among others. This may contribute to successful conflict resolution among youth [61,63]. In the African context, Olowo [60] found that peace education is overwhelmingly desired among secondary school teachers, where it can be integrated in the existing social studies curriculum. Teachers felt that incorporating peace education in the curriculum would contribute to peace and stability in the region. Based on the findings, Olowo [60] recommends that teacher training should be of vital importance to effectively teach peace education.

Despite predominantly positive outcomes following the assessment of peace education programs in various educational settings, small sample sizes at selected schools do not provide sufficient information to conclude what the quality of teaching is, and what some of the long-lasting impacts may be.

Implementation: Since peace education is usually not a stand-alone course, but is rather incorporated in the existing curricula, Baker [57] argues that teachers may be hindered when it comes to implementation due to time restrictions and its less important status in the curriculum.

Olowo [60] stresses the importance of peace education and training in African countries that are still largely affected by conflict and violence. However, there is still insufficient capacity of teachers with expertise to support peace and non-violence subject areas. Educational institutions, national governments and NGOs should support conflict-sensitive teacher education in particular by creating guidelines to improve the teacher recruitment practices.

Implications: There are multiple implications that flow from the literature on peace education. First, these studies suggest the importance of incorporating peace education in school curriculum and teacher training. It is commonly agreed upon that peace education is not a stand-alone course, and thus, it needs to be incorporated into various curricula. However, peace education is often defined in broad terms that lack clear objectives. As recommended by Coşkun [62], teachers should be trained better to develop lesson plans that integrate peace education in daily lessons across various disciplines. The objectives of each activity should be clearly defined, to include specific targets that need to be met. One goal of education across all subject disciplines should be to promote peace. To achieve that, Baker [57] suggests exposing youth to global issues early on, in primary school, as children tend to be more creative, curious and have a "can-do" attitude. This falls within the cognitive dimension of

GCED that encourages the acquisition of knowledge about global issues, and the acquisition of skills on how to resolve these issues peacefully. Experimental learning is suggested to have students work collaboratively in small groups.

Second, peace education may contribute to the socio-emotional development of youth [61], which is the second dimension of GCED that fosters a sense of belonging, values, responsibilities, solidarity, tolerance, and respect for diversity. Cooperative learning and discussion would be some of the recommended strategies to use in a classroom.

Third, peace education must include the behavioral component that will prepare teachers and students to act responsibly towards a peaceful coexistence. Positive change in behavior may include better problem-solving skills, better anger management skills, better communication, and negotiation skills among others.

Finally, educators should be trained to use a peacebuilding strategy that, on a larger scale, aims to transform the culture of violence into a culture of peace. Basaran and Karakurt [58] claim that all primary school teachers should undergo peace education training which would enhance proficiencies and competencies of pre- and in-service teachers. This would contribute to the development of a social peace culture. This is particularly important in conflict regions where teachers do not possess sufficient capacity and expertise on the topics of peace and violence.

4.1.4. Human Rights

Setting: All of the literature examined in this study focused on programs that were implemented in formal education settings: two of the programs at the university level [50,64], one at the high school level [65], one at the middle school level [66] and two at the elementary school level [67,68], refer to Figures 18 and 19. Geographically the studies and reports originated mostly in Europe, though there were two in Turkey [66,67] and two others in Norway and Cyprus [65,68]. Two articles focus on programs in the United States [50], with one being a cross-cultural endeavor between universities in the U.S. and Mexico [64].
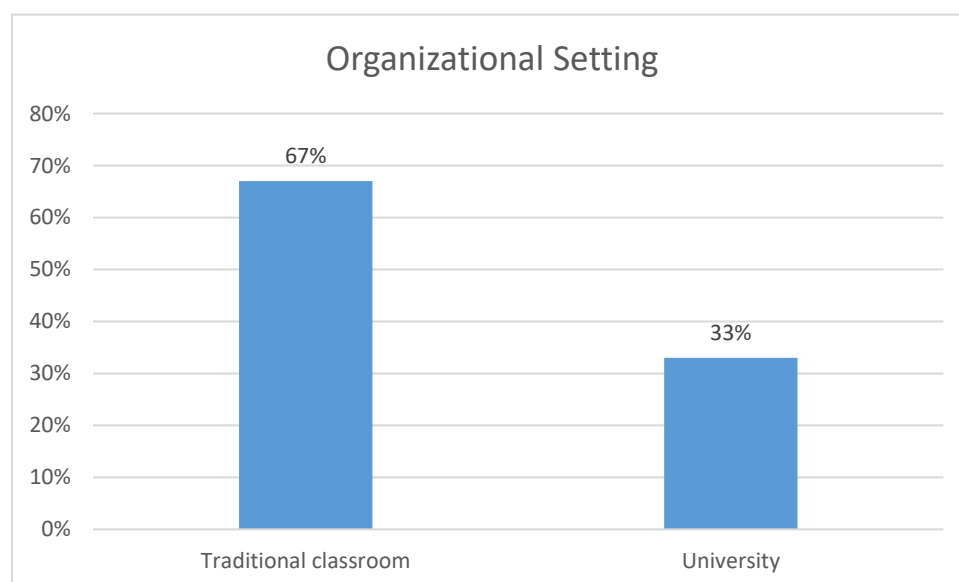

Figure 18. Organizational Setting where Human Rights Education Programs were Implemented.
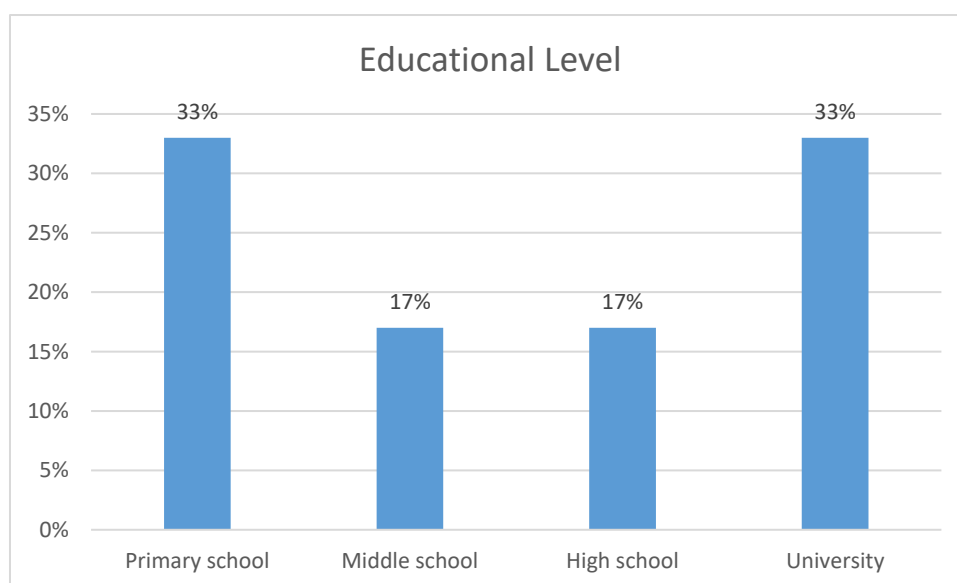
Figure 19. Educational Level of Human Rights Education Programs.

Objective: The objectives in most of the literature focused on human rights had a strong component of student or instructor self-awareness. The common thread running through these reports and programs was that greater self-awareness as a member of a global community would correlate to positive attitudes towards human rights [65]. Three of the articles focused on student awareness [64–66].

The literature also sought to identify the challenges teachers confront when attempting to use curriculum that addresses human rights and global citizenship. Teachers identified challenges in the form of comfort with the topic, knowledge around the subject of human rights, a lack of training in the content area and possible uncomfortable discussions with students [67,68]. It is interesting that the studies in Turkey and Cyprus were not focused on a specific program. The focus was on how human rights curriculum was being taught in the classroom and how teachers' understanding, perceptions and preparation impacted their ability to teach the curriculum.

The three remaining studies were program specific and occurred in the United States and Norway. In Norway, the objective was to determine students' adherence to International Baccalaureate Organization (IBO) human rights ideals. This was determined by measuring students' human rights competence, defined "as the ability to act in a way that promotes the inalienable rights and inherent dignity of all people regardless of ethnicity" [65] (p. 393). In a study conducted at Juanita College in Pennsylvania, short-term study abroad programs were evaluated for their link to student attitudes toward human rights. The researcher identified the tension between an ethnocentric versus ethnorelativist perspective in teaching human rights [50]. The third program investigated a human rights and disability course for social work and law students in the U.S. and Mexico. The objective was to determine the impact of a program that applied the perspectives of two fields, social work and the law, within two countries, on the understanding of the human rights of persons with disabilities [64].

Description: The programs described typically fell into one of two categories: international/cross-cultural experience to support human rights awareness [50,64] or human rights curricula [65–68].

Critelli et al. [64] describe a college level course, Human Rights and Disability from the Lens of Law and Social Work, that was designed with an interdisciplinary, multi-cultural approach to disability and a human rights framework. Human rights laws, treaties, and case studies were used to understand and examine the status of disability rights in Mexico and the U.S. Students worked with each other using technology to bridge the distance between New York and Mexico City.

Nagengast [50] investigates the impact of short-term study abroad programs on student attitudes towards human rights. Students from three university courses are included in the study. The control group had no study abroad component included. Student travel included trips to Gambia and Vietnam. Student intercultural sensitivity was measured to determine if they became more ethnocentric or ethnorelativist.

Transformative orientation: Human rights education can be presented in many ways and through a variety of topics. Overall, the programs are intended to be transformative for the individuals that participated in the studies by exposing teachers and students to new perspectives and experiences. Courses and curricula that include human rights topics can cause participants to think critically about social justice issues both in their community and globally [64,66]. The cross cultural, multidisciplinary course examined by Critelli, Lewis and Méndez-López [64] "facilitated greater knowledge of human rights principals and instruments, added to competence in applying a human tights framework to disability-related issues, and enhanced [students'] understanding of ways to integrate a human rights framework in social work practice" [64] (p. 133).

Duration: The duration of the programs varied widely. They ranged from as short as a single lesson [66] to as long as several years [50,68].

Implementer: In the literature identified, classroom teachers or professors implemented the programs discussed [50,64–68], as seen in Figure 20.
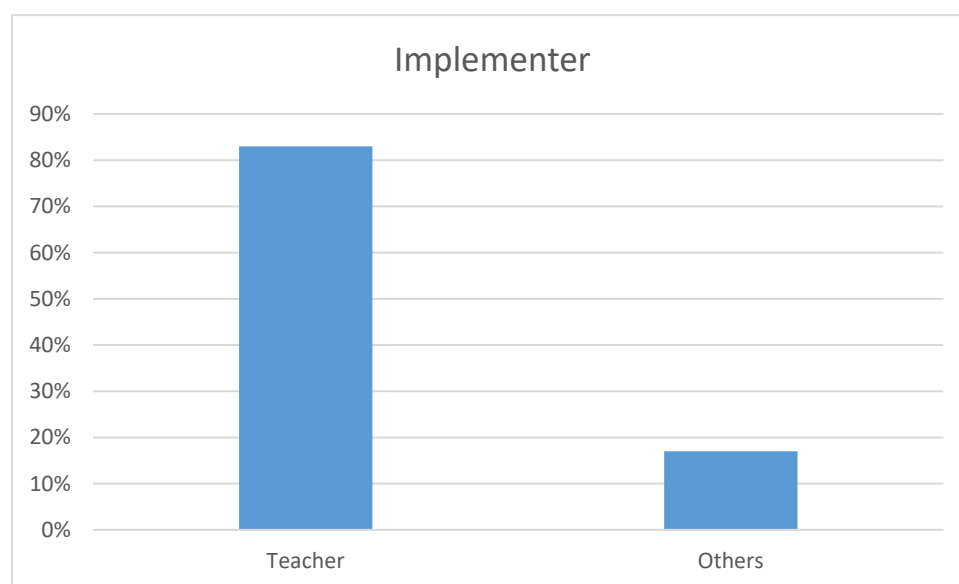

Figure 20. The Implementers of Human Rights Education Programs.

Strengths and weaknesses of the assessment approaches: In most studies, quantitative and qualitative assessment tools were used to assess human rights education programs, as seen in Figure 21. Assessment tools typically were not available and in many cases the literature did not reference a specific assessment of student learning, program outcome or teacher effectiveness. However, the tools used for assessing human rights education that were described included surveys, student papers, and interviews [50,67].
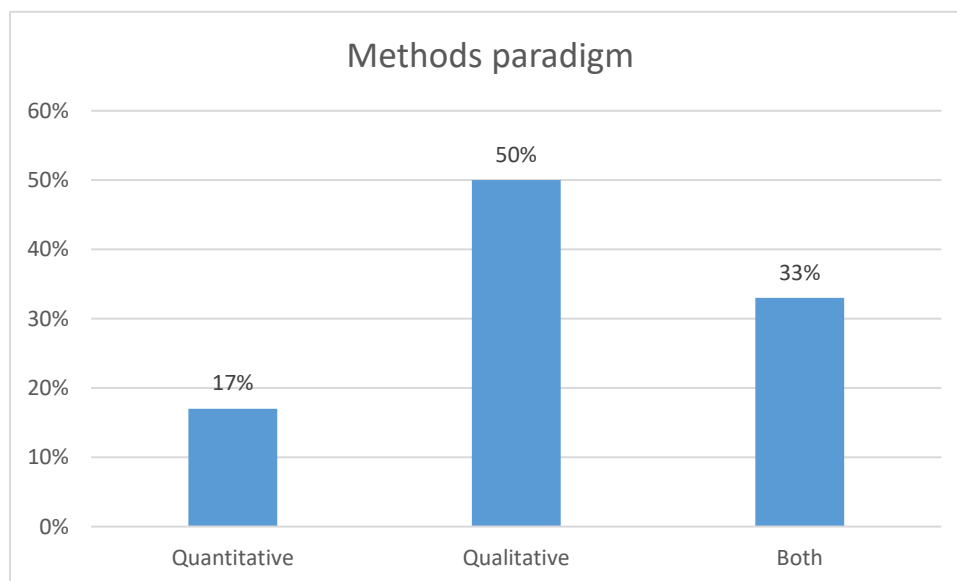
Figure 21. Methods Used to Evaluate Human Rights Education Programs.

Nagengast [50] provided the eight survey questions he developed to assess the learning outcomes of his courses. A five-point Likert scale was used to determine an overall change score between the pre- and post-trip survey for each student. A small number indicated a shift towards relativism while a large number meant a shift towards universalism. Open-ended, five-page essays were also used to further understand the quantitative data gathered from the survey. This study should be viewed cautiously; with an understanding that it applies to these courses alone. The differences in results between the courses that traveled to Gambia and students that traveled to Vietnam suggest that the design of the overall course may have more impact on learning outcomes than including a study abroad component [50]. In this case the key difference in the travel portion of course design was much more student/native population interaction in Gambia than in Vietnam.

The study of students in the IBO program in Norway used several surveys to measure ethno-cultural empathy, identification with all humanity, and human rights attitudes and intentions. While the surveys were not provided for reference, citations to publications were [65]. The author acknowledged that the three-component model and survey presented were "designed specifically to measure student competence in the context of the IBO and therefore the findings cannot be generalized beyond this context" [65] (p. 400).

Critelli et al. [64] provide survey items used to evaluate the U.S./Mexico university course, but do not provide open eneded questions used to further illuminate survey results. While the data collected provides insight into the method of human rights edcuation, the small sample size, and self-reporting of learning limit the understanding to this course alone.

Outcomes and Implementation: Two outcomes became apparent in the literature: (a) increased self-awareness correlated with increased awareness of others and (b) teacher confidence correlated with how the topic of human rights may impact student learning. The study by Parish [65] was the only study that presented statistically significant findings (see Figure 22). The first statistically significant findings presented was that an "identification with all humanity has a greater effect on the intention to act than either identification with those in [the] community or [the] nation" [65] (p. 398). Second, there was a strong, positive correlation between ethnocultural empathy—which refers, e.g., to the level to which one feels empathy towards people who are ethnically different from oneself—and the intention to act to promote human rights [65]. Lastly, a strong correlation was found between the positive attitudes of significant others (e.g., friends, colleagues, coworkers) towards human rights behavior, on one hand, and positive attitudes towards the "worthwhileness of the human rights behavior … and the intention to act to promote human rights," on the other [65] (p. 399).
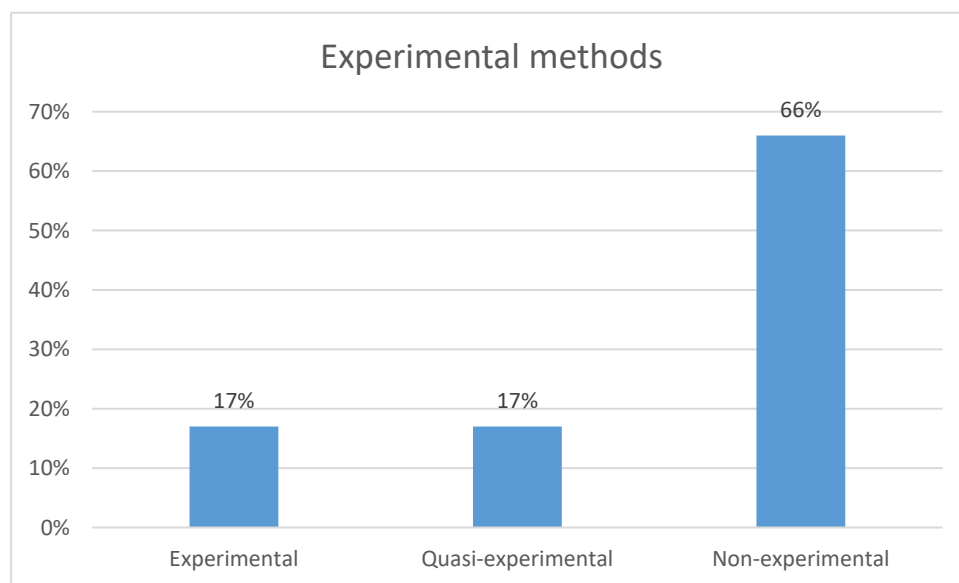
Figure 22. Percentage of Human Rights Studies by Experimental Design.

Students that studied human rights in an intercultural, interdisciplinary model reported a positive impact on their professional skill development, cultural understanding and broader views of the world [64]. Teachers that were not confident in their own understanding of human rights had more difficulty integrating the topic into their teaching [67,68]. This supports contextualized preparation and ongoing training so teachers can develop critical and transformative pedagogies in human rights education [68].

Implications: Implications of the studies in Turkey and Cyprus support the need for pre- and in-service teacher development in human rights concepts and pedagogies. Simply learning concepts without context and reflecting on teaching practices will not result in critical and transformative lessons [68]. Teachers should develop their ability to teach using discussion, group work and brain storming. These methods are outside the typical lecture with teacher directed question and answer sessions found in Turkey and Cyprus.

The three studies that focused on human rights education programs supported various implications that were specific to the area studied:

- Critelli, Lewis, and Méndez-López [64] found that social workers can utilize their expertise to advocate for the people's rights to paid employment, access to food, education, chelter and health care. Also, using a human rights framework in social work education results in a more holistic approach to professional practice.
- Nagengast [50] found that increased immersion in the local culture during a study abroad program would have a greater impact on students' views on human rights. However, the impact may be the unintentional acceptance of cutural practices that violate human rights. The later appears to be based on the influence of getting to know idividuals from the host culture well and empathizing with their cultural views of certain actions or traditions that would be considered violations of human rights.
- Parish [65] investigated the human rights competency of students in the IBO using three surveys. These surveys allowed for a comparison of student competency between different locations. This could support the measurement of student competencies using other curricula and therefore provide for the measument of an area that is difficult to assess.

Overall, the literature supports human rights being taught using a contextualized approach to increase student engagement and connection with the topic. Students of all ages appear to benefit from pedagogies that increase interaction with the topic on an individual level so connections can be

made with the topic. The small number of progamatic studies limits our understanding in the areas of teacher and student education in human rights.

4.1.5. Gender Equality

Setting: Literature that addresses the assessment of education programs in gender equality appears to be very limited. Of the two sources found for this investigation, one is based in primary grades 3, 4, 5, and 6 [69], and one is based at the university level [70]. Both programs are focused on activities in traditional classroom settings that were being provided by teachers. The two programs were studied in very different geographic locations. The first in the western United States [69] and the later in Turkey [70].

Objective: Grayson and Martin [69] present a professional development program, Gender Expectation and Student Achievement (GESA), that guides in-service teachers through a collegial process of self-evaluation intended to reduce gender bias in their teaching. They argue that gender bias is evident in five areas of classroom instruction: instructional contact; grouping and organization; discipline; self-concept; and evaluation. In these areas, the bias against girls is apparent and harmful. The teacher training aims to make teachers aware of this bias and once aware, they are willing to change practices to reduce the impact of bias on their students.

Acar-Erdol and Gözütok [70] aim to reduce the impact of gender inequality through a curriculum for pre-service teachers with the intention of improving their level of knowledge and awareness of gender equality. The research aims to evaluate the curriculum and propose adjustments based on reflective assessment. While the two studies use different vocabulary, they both identify gender equality as the equal treatment of students and non-discrimination in education regardless of gender.

Description: In 1984, GESA's professional development program was based on eight years of data collection and refinement [69]. The program included five monthly meetings of teachers in a collegial atmosphere that supported teacher awareness of gender equity issues within their individual classrooms. The organization of the program supported self-reflection and teacher practice through peer observations conducted between the monthly workshop. Teachers not only observed the practices of others, but also provided feedback based on data taken during the observations. The organization of the program was based on the theories of change management and staff development at the time. There are six components:

1. Expectations
2. Attitudinal change
3. Behavior change
4. Climate for change
5. Ownership
6. Dissemination

The five workshops were based on five areas of gender disparity, mentioned previously:

1. Instructional contact
2. Grouping and organization
3. Discipline
4. Self-concept
5. Evaluation

Following each workshop, teams of four teachers observed each other's classes three times. The observing teacher collects data on interactions between the teacher and students that can later be coded.

Turkey's Gender Equality Curriculum [70] for pre-service teachers was developed using the Taba Model. The model includes the following six steps:

1. Diagnosis of student (pre-service teachers) needs
2. Formulation of objectives
3. Selection and organization of content
4. Selection and organization of learning experiences
5. Selection and organization of evaluation and measurement
6. Control of the relationships of the curriculum's dimensions

A group of eight experts, including curriculum developers, measurement and evaluation specialists and gender issue specialists, evaluated the curriculum in each of the six areas above.

Duration: The literature generally does not describe the implementation of programs. Therefore, the duration of a program does not apply. At the time of the report, the GESA professional development programs had been implemented for eight years. Each implementation lasted one school year [69].

Implementer: The GESA professional development programs were implemented by the researchers with the support of the Office of the Los Angeles County Superintendent of Schools [69]. The gender equality curriculum designed in Turkey was designed and the evaluation protocol implemented by the researchers [70].

Transformative orientation: The understanding of gender equality issues, a self-awareness of gender roles, and adding gender equality subject matter into curriculum is expected to be transformative. The GESA program intends to support changes in teacher practice. Grayson and Martin [69] state, "Once teachers have examined their own biases as demonstrated by their own behavior toward male and female students, curricular and other changes can be accepted more easily" [69] (p. 2).

The Gender Equity Curriculum in Turkey proposes to increase teachers' understanding of the issue and building social justice [70]. As a result of raising awareness, it is expected that gender discrimination will be reduced.

Strengths and weaknesses of the assessment approaches: Acar-Erdol and Gözütok [70] included the 29 item Reflective Evaluation Form (REF) completed by a relatively small group of eight experts to assess the curriculum in four areas: learning outcomes; content; learning experiences; and measurement and evaluation. This form included space for additional comments. The REF was based on current research and appeared to be thorough. The feedback gained from the results of the REF were specific and resulted in some adjustments being made to the curriculum. However, the group of experts that did the assessment was small and may have benefited from more diversity.

Grayson and Martin [69] used data from pre- and post- testing of the students in mathematics, reading and language arts along with pre- and post-gender expectations surveys taken by teachers and students, to assess the impact of their program. Unfortunately, the surveys were not included, and the academic tests were not specified. At the time of writing, the program was not complete, therefore no actual data was reported. Further investigation may result in finding the final published study and more details about the assessment tools.

Implementation: It is difficult to fully appreciate the effectiveness of Grayson and Martin's [69] study without final results. Although it is unlikely that the findings were drastically different, a final draft would resolve some questions about the data.

A follow-up to the curriculum developed by Acar-Erdol and Gözütok [70] includes analysis of its effectiveness and impact on new teachers' understandings of gender bias in themselves and their classrooms. Although not specifically discussed within the article, this implies that continued analysis of the impact of the curriculum on pre-service teachers should be conducted—the benefit being further refinement of the curriculum to attain the intended goals.

Outcomes: Acar-Erdol and Gözütok [70] state that teachers prepared in gender equity issues could reduce gender stereotypes and reduce gender inequality in educational settings. The curriculum that they developed and had analyzed was found to have learning outcomes, content, learning experiences and evaluation tools consistent with each other. The teaching principles and activities aligned with intended learning outcomes and the problems included in the evaluation tools were aligned. There were adjustments made to the curriculum based on the expert feedback.

While the program implemented by Grayson and Martin [69] was not complete at the time of writing, some results were shared from preliminary data. Teachers reduced the disparities in their interactions with male and female students. All participating teachers identified at least on relevant curricular change implemented during the program. They also reported benefiting from the collegial observations and positive changes in their attitudes and positive effects on their students. Each teacher identified at least one major area of disparity and a specific interaction that impacted their classroom.

Implications: The literature implies that gender equity is an important issue in education and in preparing global citizens that are equipped to reduce social injustice. This requires preparing teachers for the integration of gender equality into subject matter and to address it literally in the classroom [70]. Studies that include the assessment of programs or the effectiveness of programs about gender equality is very limited. There does seem to be some agreement that teachers, whether pre-service or in-service, can benefit from more personal awareness of their own understanding of gender norms and how gender inequality can impact the classroom. Despite the gains in awareness over the past few decades, there is still much to uncover. The studies support the need to guide teachers through a process to identify their own bias in order to move towards mitigating it in themselves and others. The added complexities of gender bias in the current understanding, or lack of understanding, of the LGBTQ community makes the topic of gender inequality in the classroom even more important. The lack of analysis of curriculum effectiveness leaves us depending upon an anecdotal understanding. This appears to be an area of potential future research.

5. Discussion and Conclusions

To be sure, there are many promising findings documented in the publications reviewed. The literature suggests effects, for example, on the knowledge, attitudes, values, beliefs, and behavior related to the five themes of interest. It has been repeatedly documented that courses dedicated to the themes addressed here can lead to outcomes that are relevant for SDG 4.7. Yet, there are a number of sensitive and politically contentious questions that must be answered going forward. For instance, one key question is how each of the five themes is defined and operationalized through the content included in the courses taught. As was discussed in the preceding sections, there is great variation across studies when it comes to how key terms are defined and what content/approaches are incorporated into learning activities. A further question is whether teachers will feel comfortable teaching content that they see as biased or that goes beyond what they understand to be a presentation of "the facts." And, finally, an important question is how each of these five issues will be evaluated, measured, and monitored for the purpose of achieving the SDGs. There are no easy answers to these questions, especially since they will require political negotiation among a range of actors at both the national and international levels. National actors are, of course, charged with developing and approving policy, curriculum, and national assessment strategies, but it is also true that a range of international experts and organizational actors are working together to define the SDG indicators and to design monitoring plans that will enable the collection of the necessary data to track progress on those indicators. The ways that actors from both the national and international levels engage in the coming years will determine the answers to the questions posed here.

The path forward is made more difficult by the fact that a relatively small percentage of the reviewed studies employed methods that are seen as credible, that is, seen as policy relevant. Only 19 of the 56 studies employed experimental (n = 5) or quasi-experimental (n = 14) methods. (See Appendix D to easily identify which studies employed these methods). While there are numerous limitations to both quasi-experimental and experimental methods [71], it remains true, in the current context, that these methods are seen to be more valid for the purpose of claiming effects, drawing lessons, and informing policy. Beyond an exclusive consideration of which studies used "rigorous" methods, we suggest that lessons be drawn based on whether the evaluation of the underlying education program provides practical insights into how the SDGs can be achieved, assessed, and monitored at various levels.

The above suggestion is more easily stated than realized. This is because the existing language of SDG4.7 is both very broad and very narrow. Of the five indicators for SDG 4.7 that have been defined, the first, that is, the "global indicator," should track the extent to which "(i) global citizenship and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment" [3]. While is it not clear how a single indicator can track these various dimensions, it also stands out that this indicator does not depend on how each of its key terms are defined. On one hand, this is advantageous, since it allows for flexibility across countries that allows them to be contextually responsive; on the other hand, this is conceptually problematic, since it is not clear how comparisons of this indicator across countries should be interpreted, especially when there are different definitions and/or approaches to engaging with the relevant content.

Furthermore, the majority of the language of the other, "thematic" indicators currently associated with SDG4.7 does not seem to lend itself to ensuring that students engage deeply with the issues related to SDG4.7. The language for indicators 4.7.2-4.7.5 is as follows:

- 4.7.2: Percentage of schools that provide life skills-based HIV and sexuality education.
- 4.7.3: Extent to which the framework on the World Programme on Human Rights Education is implemented nationally.
- 4.7.4: Percentage of students by age group (or education level) showing adequate understanding of issues relating to global citizenship and sustainability; and
- 4.7.5: Percentage of 15-year-old students showing proficiency in knowledge of environmental science and geoscience [3] (p. 2).

While the last two indicators do attempt to get at the issue of student knowledge, as opposed to simply student exposure to certain content, it is also important to note that there is yet to be agreement on the exact language for these indicators. The available documentation on the website for the Technical Cooperation Group—the group charged with discussing and developing indicators for SDG4—states that these two indicators are in need of further development [72]. Thus, it is not clear what the language will be, let alone how it will be operationalized in policy, curricula, or assessment.

In any event, when thinking practically about SDG4.7, one realizes that—past the political debates that beset agenda-setting and indicator elaboration—there is a real need for school systems to define and pursue more specific language and indicators for SDG4.7. It is here where this literature review can be useful. Those charged with, or interested in, developing policy, curricula, or assessments related to SDG4.7 can refer to the studies reviewed here. These studies characterize the various definitions, orientations, and foci that different educational interventions entail, as well as the associated outcomes. These studies can thus be used to draw lessons for how to achieve and assess progress related to 4.7. This is particularly true when it comes to making progress at the classroom or programmatic levels—those levels for which indicators have not yet been developed.

There is a clear emphasis in the Framework for Action that accompanies the education-related SDGs on the need for international organizations to assist countries with the technical and financial resources needed to achieve the internationally agreed upon goals. However, in the absence of clarity around what students are supposed to achieve and what countries are supposed to monitor, it seems unlikely that much support will be offered on this front. In the short-term, it is more probable that efforts related to SDG4.7 will be taken up by, both, countries who take it upon themselves and individual organizations that have an interest in this area.

Interested countries and organizations should not underestimate the planning and resources that are required in order to make progress on SDG4.7. For example, as part of their efforts, these actors should be sure not to overlook the need for teacher training to go along with new (or existing) curricula and programs for students [73]. At the same time, both governments and organizations should be attentive to the financial, personnel, and administrative resources that are required in order to simply communicate and to train teachers, principals, etc. on the plans, strategies, and curricula

that are developed. If the research of Elaine Unterhalter and colleagues [74] is any indication, many actors at the subnational level are not even aware of global goals, let alone the corresponding plans, policies, etc. that have been developed at the national level. In part, this may be because insufficient resources have been invested in mobilizing support to ensure implementation and follow-up for the projects developed by governments and international organizations. At the same time, the lack of meaningful engagement with global goals at subnational levels may be a result of the macro nature of the indicators used to track progress on said goals. If the indicators reflect information that is relatively easy to collect but is mostly void of any meaningful insights about what is going on at the school level, how beneficial is the entire exercise of the global goals in the first place?

Perhaps a promising course of action could be to shift from a primary focus on learning outcomes to focus as well on the percentage of students who are engaged in school or community projects that attempt to make progress on the issues embedded in SDG4.7. After all, it is often by doing something in practice that we learn. Transformational experiences are more likely when we take students out of the classroom and put them in connection with the wider world. Following this line of thought, perhaps it is better to focus on teaching teachers both relevant content/curricula related to SDG4.7 as well as teaching them how to organize and implement projects and innovative pedagogical approaches that prompt students to do the following: take action connected to the SDGs, interact with each other across cultural lines, teach them how to get involved in their community, take away their reticence to engage in SDG issues, get them familiar with their environment, and, indeed, instill in them the skills and attitudes that GCEd calls for, so that they can start—or continue— to confront the challenges that affect us globally.

The indicators for SDG 4.7 could then focus on whether ESD/GCEd etc. has been incorporated into the curricula and whether students are engaged in relevant projects. We are not saying that none of the dimensions of 4.7 cannot be learned in the classroom. Certainly, as this review has shown, classroom learning is important for acquiring the knowledge, skills, values, etc. related to SDG4.7. What we are suggesting is that these efforts should be complemented by experiential learning that extends students' foundation of knowledge and gives them experience with the wider world—and the people in it—for which we all need to care.

At the sub-national or institutional level of the k-12 school, university, or community program, monitoring and evaluation strategies could then be multidimensional and could draw on the variety of assessment techniques documented in the studies reviewed here. As has been shown, a range of quantitative and qualitative methods were used to gauge the ways that educational programs and interventions related to SDG4.7 have affected relevant understandings, knowledge, skills, beliefs, and behaviors. While global and country-level indicators may necessarily be more summative in nature, we suggest that institutional-level indicators, evaluation, and monitoring should be more formative, nuanced, and qualitative in nature—in order to be more useful for providing feedback that can encourage growth at the individual and local level. Here, surveys or questionnaires, which are useful for assessing knowledge, beliefs, and values, can be complemented with such strategies as interviews, focus groups, classroom observations, curriculum and lesson plan analysis, participant diaries, and self-reflective essays. In a cyclical way, the insights generated from these strategies would not only serve as the basis for feedback to teachers and students engaging with the knowledge, skills, etc. that are necessary to achieve the SDGs, but could also inform the design of professional development and teacher training to address areas of need. In the ways described above, learning, monitoring, and evaluation can work together to make meaningful progress on multiple levels towards a future in which the world is characterized by sustainable development, acceptance of cultural diversity, peaceful co-existence, the protection of human rights, and gender equality.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A : Search Protocols

Protocol 1: Focus on studies that assess student learning related to ESD and GCEd at the institutional level (schools, classrooms, programmes, projects).

TI = ((Teaching OR Learning OR Education* OR Curriculum OR Assessment OR Assess* OR Educat* OR Teach* OR Curric* OR Stud*) AND ("Sustainable development" OR "Sustainable lifestyle" OR "Human rights" OR "Gender equality" OR Peace OR "Non-violence" OR "Global citizenship" OR "Cultural diversity" OR Diversity OR Gender OR Equality OR "Global citizenship education" OR "SDG4.7" OR ESD OR "Sustainable future") AND (Indicators OR Outcomes OR Impacts OR Results OR Implications OR Lessons OR Effects OR Achievement OR Competencies OR Competences OR Measurement OR Assessment OR Monitoring))

Protocol 2: Focus on studies that assess teacher education related to ESD and GCEd.

TI = (("Teacher preparation" OR "Teacher education" OR "Teacher training" OR " Teacher development" OR "Teacher credential*" OR "Teacher exam*" OR "Teacher prep*" OR "Teacher train*" OR "Professional development") AND ("Sustainable development" OR "Sustainable lifestyle" OR "Human rights" OR "Gender equality" OR Peace OR "Non-violence" OR "Global citizenship" OR "Cultural diversity" OR Diversity OR Gender OR Equality OR "Global citizenship education" OR "SDG4.7" OR ESD OR "Sustainable future") AND (Indicators OR Outcomes OR Impacts OR Results OR Implications OR Lessons OR Effects OR Achievement OR Competencies OR Competences OR Measurement OR Assessment OR Monitoring))

Appendix B : Master List of Retained Studies

Acard-Erdol, T.; Gözütok, F. D. Development of Gender Equality Curriculum and its Reflective Assessment. *Turkish Journal of Education* **2018**, *7* (3) 117–135.

Andersson, K. Starting the Pluralistic Tradition of Teaching? Effects of Education for Sustainable Development (ESD) on Pre-Service Teachers' Views on Teaching about Sustainable Development. *Environmental Education Research* **2017**, *23* (3), 436–449. DOI: 10.1080/13504622.2016.1174982.

Andersson, K.; Jagers, S.; Lindskog, A.; Martinsson, J. Learning for the Future? Effects of Education for Sustainable Development (ESD) on Teacher Education Students. *Sustainability* **2013**, *5* (12), 5135–5152. DOI: 10.3390/su5125135.

Appleyard, N.; McLean, L. R. Expecting the Exceptional: Pre-Service Professional Development in Global Citizenship Education. *International Journal of Progressive Education* **2011**, *7*, 6–32.

Baker, J.; Hunter, J. Teaching for a Safer World: Lessons from the World Peace Game. *Independent School* **2013**, *72* (2), 42–46.

Ball, A. F. Preparing Teachers for Diversity: Lessons Learned from the US and South Africa. *Teaching and Teacher Education* **2000**, *16* (4), 491–509.

Başaran, S. D.; Karakurt, S. Ö. Development and Evaluation of the Efficiency of In-Service Training Program with the Theme of Peace Education. *Universal Journal of Educational Research* **2017**, *5* (8), 1425–1434.

Bell, L. C. A Longitudinal Measure of the Perceptual Impact of a Cultural Diversity Teaching Practicum on the Interpersonal Competency of Student Teachers. *Journal of Agricultural Education* **2000**, *41* (2), 11–18.

Booker, K. C.; Merriweather, L.; Campbell-Whatley, G. The Effects of Diversity Training on Faculty and Students' Classroom Experiences. *International Journal for the Scholarship of Teaching and Learning* **2016**, *10* (1), Art. 3.

Brody, S. D.; Ryu, H. C. Measuring the Educational Impacts of a Graduate Course on Sustainable Development. *Environmental Education Research* **2006**, *12* (2), 179–199. DOI: 10.1080/13504620600688955.

Carrell, L. J. Diversity in the Communication Curriculum: Impact on Student Empathy. *Communication Education* **1997**, *46* (4), 234–244.

Castellanos, M.; Cole, D. Disentangling the Impact of Diversity Courses: Examining the Influence of Diversity Course Content on Students' Civic Engagement. *Journal of College Student Development* **2015**, *56* (8), 794–811.

Chatzifotiou, A. Environmental Education, National Curriculum and Primary School Teachers. Findings of a Research Study in England and Possible Implications upon Education for Sustainable Development. *The Curriculum Journal* **2006**, *17* (4), 367–381. DOI: 10.1080/09585170601072478.

Coşkun, H. Description of a Model for Lesson Planning on Peace Education in Teacher Training. *Journal of Education Culture and Society* **2018**, *9* (1), 118–142. DOI: 10.15503/jecs20181.118.142.

Critelli, F.; Lewis, L.; Méndez-López, A. Educating for an Inclusive World: Lessons Learned from a Globally Networked Human Rights and Disability Course for Social Work and Law Students. *Journal of Teaching in Social Work* **2017**, *37* (2), 121–137.

de Kraker, J.; Dlouhá, J.; Henderson, L. M.; Kapitulcinová, D. The European Virtual Seminar on Sustainable Development as an Opportunity for Staff ESD Competence Development within University Curricula. *International Journal of Sustainability in Higher Education* **2017**, *18* (5), 758–771. DOI: 10.1108/IJSHE-03-2016-0040.

Grayson, D. A.; Martin, M. D. Gender Expectations and Student Achievement: A Teacher Training Program Addressing Gender Disparity in the Classroom; American Educational Research Association: New Orleans, USA, 1984.

Hood, S.; Parker, L. Minority Students Informing the Faculty: Implications for Racial Diversity and the Future of Teacher Education. *Journal of Teacher Education* **1994**, *45* (3), 164–171.

Hunt, F. Schools for Future Youth Evaluation Report: Developing Young People as Active Global Citizens. 2017. Available online: http://discovery.ucl.ac.uk/10030832/9/Hunt_DERC-Report17-SFYouth-FrancesHunt.pdf (accessed on February 4, 2020).

Kadis, C.; Avraamidou, L. Outdoors Environmental Education for the Service of Peace: Lessons from a 2 Year Youth Program for Reconciliation in Cyprus. *Science Education Review* **2008**, *7* (2), 64–71.

Kaya, M. F. The Effect of Six Thinking Hats on Student Success in Teaching Subjects Related to Sustainable Development in Geography Classes. *Educational Sciences: Theory & Practice* **2013**, *13* (2), 1134–1139.

Kesten, A.; Brodsky Schur, J.; Gürsoy, K. Teaching Human Rights in Turkey: Commentaries on a Single Lesson from Multiple Perspectives. *Journal of Social Science Education* **2014**, *13* (2), 146–156.

Kieu, T. K.; Singer, J. Involvement of NGOs in Training Teachers in Education for Sustainable Development in Vietnam: A Case Study. *European Journal of Sustainable Development* **2017**, *6* (1), 153–166. DOI: 10.14207/ejsd.2017.v6n1p153.

Kieu, T. K.; Singer, J.; Gannon, T. J. Education for Sustainable Development in Vietnam: Lessons Learned from Teacher Education. *International Journal of Sustainability in Higher Education* **2016**, *17* (6), 853–874. DOI: 10.1108/IJSHE-05-2015-0098.

Kubal, T.; Meyler, D.; Stone, R. T.; Mauney, T. T. Teaching Diversity and Learning Outcomes: Bringing Lived Experience into the Classroom. *Teaching Sociology* **2003**, *31* (4), 441–455.

Kvam, D. S.; Considine, J. R.; Palmeri, T. Defining Diversity: An Analysis of Student Stakeholders' Perceptions of a Diversity-Focused Learning Outcome. *Communication Education* **2018**, *67* (3), 287–307. DOI: 10.1080/03634523.2018.1465189.

Leh, J. M.; Grau, M.; Guiseppe, J. A. Navigating the Development of Pre-Service Teachers' Intercultural Competence and Understanding of Diversity. *Journal for Multicultural Education* **2015**, *9* (2), 98–110. DOI: http://dx.doi.org/10.1108/JME-12-2014-0042.

Nagengast, E. An Assessment of Learning Outcomes in Short-Term Study Abroad and Human Rights Education. *International Research and Review: Journal of Phi Beta Delta* **2017**, *7* (1), 77–92.

Olowo, O. Effects of Integrating Peace Education in the Nigeria Education System. *Journal of Education and Practice* **2016**, *7* (18), 9–14.

Olsson, D.; Gericke, N. The Adolescent Dip in Students Sustainability Consciousness—Implications for Education for Sustainable Development. *The Journal of Environmental Education* **2016**, *47* (1), 35–51. DOI: 10.1080/00958964.2015.1075464.

Olsson, D.; Gericke, N. The Effect of Gender on Students Sustainability Consciousness: A Nationwide Swedish Study. *The Journal of Environmental Education* **2017**, *48* (5), 357–370. DOI: 10.1080/00958964.2017.1310083.

Olsson, D.; Gericke, N.; Chang Rundgren, S.-N. The Effect of Implementation of Education for Sustainable Development in Swedish Compulsory Schools—Assessing Pupils' Sustainability Consciousness. *Environmental Education Research* **2016**, *22* (2), 176–202. DOI: 10.1080/13504622.2015.1005057.

O'Neal, G. S. Teaching Note: Self-Assessment and Dialogue as Tools for Appreciating Diversity. *Journal of Social Work Education* **2012**, *48* (1), 159–166.

Parish, K. A Measure of Human Rights Competence in Students Enrolled on the International Baccalaureate Diploma Programme. *Oxford Review of Education* **2019**, *45* (3), 390–404.

Powers, S.; Price-Johnson, C.; Creative Research Associates, I. *Teens in Action: In Pursuit of Peace Curriculum*; Final Evaluation Report. S.I.: Distributed by ERIC Clearinghouse. Creative Research Associates, Tucson, USA, 2002.

Qablan, A.; Al-Ruz, J.; Khasawneh, S.; Al-Omari, A. Education for Sustainable Development: Liberation or Indoctrination? An Assessment of Faculty Members' Attitudes and Classroom Practices. *International Journal of Environmental and Science Education* **2009**, *4* (4), 401–417.

Remington-Doucette, S.; Musgrove, S. Variation in Sustainability Competency Development According to Age, Gender, and Disciplinary Affiliation. *International Journal of Sustainability in Higher Education* **2015**, *16* (4), 537–575. DOI: 10.1108/IJSHE-01-2013-0005.

Sağdıç, A.; Şahin, E. An Assessment of Turkish Elementary Teachers in the Context of Education for Sustainable Development. *International Electronic Journal of Environmental Education* **2016**, *6* (2), 141–155.

Sağkal, A. S.; Türnüklü, A.; Totan, T. Empathy for Interpersonal Peace: Effects of Peace Education on Empathy Skills. *Educational Sciences: Theory and Practice* **2012**, *12* (2), 1454–1460.

Sağkal, A. S.; Türnüklü, A.; Totan, T. Peace Education's Effects on Aggression: A Mixed Method Study. *Eurasian Journal of Educational Research* **2016**, *16* (64), 45–68.

Şahan, G.; Tural, A. Evaluation of Human Rights, Citizenship and Democracy Course by Teachers Vision. *World Journal of Education* **2018**, *8* (2), 46–53.

Schuler, S.; Fanta, D.; Rosenkraenzer, F.; Riess, W. Systems Thinking within the Scope of Education for Sustainable Development (ESD)—A Heuristic Competence Model as a Basis for (Science) Teacher Education. *Journal of Geography in Higher Education* **2018**, *42* (2), 192–204.

Schutte, I. W.; Kamans, E.; Wolfensberger, M. V. C.; Veugelers, W. Preparing Students for Global Citizenship: The Effects of a Dutch Undergraduate Honors Course. *Education Research International* **2017**, *2017*, 1–12.

Schweisfurth, M. Education for Global Citizenship: Teacher Agency and Curricular Structure in Ontario Schools. *Educational Review* **2006**, *58* (1), 41–50.

Scott, C. L.; Sims, J. D. Exemplary Models of Faculty-Driven Transformative Diversity Education Initiatives: Implications for Metropolitan Universities. *Metropolitan Universities* **2018**, *29* (3), 108–122.

Sebba, J.; Robinson, C. Evaluation of UNICEF UK's rights respecting school award. Final report. UNICEF: London, UK, 2010.

Shephard, K.; Harraway, J.; Lovelock, B.; Mirosa, M.; Skeaff, S.; Slooten, L.; Strack, M.; Furnari, M.; Jowett, T.; Deaker, L. Seeking Learning Outcomes Appropriate for 'Education for Sustainable Development' and for Higher Education. *Assessment & Evaluation in Higher Education* **2015**, *40* (6), 855–866.

Sims, L.; Falkenberg, T. Developing Competencies for Education for Sustainable Development: A Case Study of Canadian Faculties of Education. *International Journal of Higher Education* **2013**, *2* (4), 1–14.

Singer-Brodowski, M.; Grossmann, K.; Bartke, S.; Huning, S.; Weinsziehr, T.; Hagemann, N. Competency-Oriented Education for Sustainable Development. *International Journal of Sustainability in Higher Education* **2018**, *19* (7), 1299–1316.

Somers, E. News Versus Newsfeed: The Impact of Social Media on Global Citizenship Education. *Policy & Practice: A Development Education Review* **2017**, *24*, 126–137.

Spahiu, M.; Lindemann-Matthies, P. Effect of a Toolkit and a One-Day Teacher Education Workshop on ESD Teaching Content and Methods—A Study from Kosovo. *Sustainability* **2015**, *7* (7), 8051–8066.

Sperandio, J.; Grudzinski-Hall, M.; Stewart-Gambino, H. Developing an Undergraduate Global Citizenship Program: Challenges of Definition and Assessment. *International Journal of Teaching and Learning in Higher Education* **2010**, *22* (1), 12–22.

Turnsek, N. Enjoying Cultural Differences Assists Teachers in Learning about Diversity and Equality. An Evaluation of Antidiscrimination and Diversity Training. *Center for Educational Policy Studies Journal* **2013**, *3* (4), 117–138.

Youngs, P. Challenges in Studying the Impact of Integrated Approaches to Preparing Teachers for Diversity. Spencer Foundation: Chicago, USA, 1999.

Zachariou, A.; Valanides, N. Education for Sustainable Development: The Impact of an Out-Door Program on Student Teachers. *Science Education International* **2006**, *17* (3), 187–203.

Zembylas, M.; Charalambous, C.; Charalambous, P. Teachers' Pedagogical Perspectives and Teaching Practices on Human Rights in Cyprus: An Empirical Exploration and Implications for Human Rights Education. *Pedagogies: An International Journal* **2016**, *11* (3), 197–217.

Appendix C : Literature Review Template

EDUCATION FOR SUSTAINABLE DEVELOPMENT AND GLOBAL CITIZENSHIP

A. Article/publication bibliographic information: [Fill in the reference/bibliographic information here]

B. Kind of publication (e.g., book, chapter, article, report, etc.):

C. Focus of publication (highlight one or both):

1. Various local/country/regional/international efforts of teaching and learning assessment of ESD/GCED/SDG4.7 at the institutional level (schools, classrooms, programmes, projects).
2. Various local/country/regional/international efforts to assess the effectiveness of teacher education in the areas of ESD/GCED/SDG4.

D. Dimensions of interest:

1. FOCUS: Focus of the program, curriculum, etc. in relation to SDGs (e.g., education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development, etc.)
2. SETTING:

   a. ORGANIZATIONAL SETTING: In what kind of organizational setting was the program, curriculum, etc. implemented? (e.g., traditional classroom, after-school activity, summer program, university, program of non-governmental organization, etc.)

    b.   EDUCATIONAL LEVEL: pre-kindergarten, primary schools, middle school, high school, university, adult education, etc.

    c.   GEOGRAPHIC LOCATION: What country/region/city, etc.?

3.   CHARACTERISTICS:

    a.   OBJECTIVE: What was the main objective(s) of the program? What learner (or teacher) competencies does the program aspires to develop?

    b.   DESCRIPTION: What was the nature of the program/curriculum/etc.? How was it implemented? What did it entail? What activities did the participants do?

    c.   TRANSFORMATIVE: Did the program seek to be transformative? If so, how?

    d.   DURATION: Over what time period implemented?

    e.   IMPLEMENTER: Who implemented the program? Teacher? Volunteers? NGO employee?

4.   ASSESSMENT: Methods, tools, instruments, etc. for assessing or evaluating student learning, program outcomes, and/or teacher effectiveness. (We want to describe the assessment instrument and its components, and we want to note how it connects to sustainable development and global citizenship)

5.   AVAILABILITY: Is the assessment, instrument, etc. available or included in the study? (Are we able to see/refer the assessment? Is it included in the study, perhaps in an appendix? If so, where can it be found?)

6.   STRENGTHS/WEAKNESSES OF INSTRUMENT: What are the strengths and weaknesses of the assessment? (These can be your observations, or they can be observations that are noted in the study. Be sure to differentiate whether the comments you include here are your own or if they come from the author of the study. NOTE: These comments can focus on the extent to which the instrument does a good job of evaluating the stated focus of the program.)

7.   OUTCOMES: What outcomes were documented by the study? What effects did the program, curriculum, etc. have? (Here, the focus is on findings that are relevant to the focus of this study, i.e., sustainable development and global citizenship).

8.   IMPLICATIONS: Does the study identify/suggest any useful policy/pedagogical implications for further implementation of the SDGs? (These notes can be from the author or our own observations/thoughts.)

9.   IMPLEMENTATION: Were there any issues with the implementation of the program, curriculum, etc. that could have affected the results documented? (Here, the focus is on whether or not—and the extent to which—the results of the program may have been hampered by how the program was implemented, or the context into which it was implemented. We want to make notes about this so that we can carefully interpret the results/outcomes that we document in #7.)

Appendix D : Summary of Characteristics of the Retained Studies

Table A1. Summary of Characteristics of the Retained Studies.

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
1	Acar-Erdol & Gözütok	Gender equality	The program assessed and finalized a Gender Equality Curriculum for pre-service teachers.	Turkey	N/A	Others	Quantitative *: A reflective evaluation form	Positive effects	Yes
2	Andersson	SDG	The five-week ESD course was derived from science courses with a goal to introduce pre-service teachers to the basic values, lifestyles and tools that they will need to teach students about democratic participation and informed choices about sustainable development.	Sweden	5 weeks	Teacher(s)	Quantitative *: Surveys (pre- and post-completion)	Positive effects	Yes
3	Andersson, Jagers, Lindskog & Martinsson	SDG	The five-week ESD course was derived from science courses with a goal to introduce pre-service teachers to the basic values, lifestyles and tools that they will need to teach students about democratic participation and informed choices about sustainable development.	Sweden	5 weeks	Teacher(s)	Quantitative *: Surveys (pre- and post-completion)	Positive effects	Yes
4	Appleyard & McLean	Diversity	A professional development (PD) program in global citizenship education (GCE) that seeks to develop teacher education candidates' knowledge and capacities as global citizens during a one-year Bachelor of Education program.	Canada	8 months	Teacher(s)	Qualitative: Document reviews, surveys and focus groups	Positive effects	Yes
5	Baker & Hunter	Peace education	Primary schoolers tackle complex global issues in the World Peace game that may prepare them to solve real world issues in the future.	USA	2–3 months	Teacher(s)	Qualitative: Classroom observations	Positive effects	No
6	Ball	Diversity	This study is an analysis of the U.S. and South African teachers' developing discourses in a teacher education program. Teachers were exposed to a course that would have them consider the role and function of literacies in their lives and the lives of others, especially among diverse students.	USA	3 years	Teacher(s)	Qualitative: Journal writings, transcripts, reflections	Positive effects	No

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
7	Başaran & Karakurt	Peace education	The In-Service Training Program with the Peace Education for Primary Teachers (BEHEP) was developed to create awareness among primary school teachers regarding peace education, and to enhance their knowledge and skills in this topic.	Turkey	28 h	Teacher(s)	Mixed methods: Interviews (semi-structured), concept forms, course plans, participant diaries and in-service training evaluation scales	Positive effects	No
8	Bell	Diversity	Student teachers of agricultural education and family and consumer science enrolled in the Colleges of Agricultural Sciences and Natural Resources, and Human Resources and Family Sciences respectively. The objective of the program was to evaluate the longitudinal effect of a planned in-school practicum experience addressing cultural diversity on the self-perception of student teachers regarding their interpersonal competency in such situations.	USA	6 days	Teacher(s)	Quantitative: Questionnaire (4-point Likert scale)	Positive effects	No
9	Booker, Merriweather & Campbell-Whatley	Diversity	SDI provides faculty and staff from different departments and colleges at University with diversity training that incorporates best practices. The SDI topics include: multicultural education, cultural awareness, gender identity, classroom climate, students with disabilities, religion, sexual orientation, a research perspective, curriculum diversity, etc.	USA	5 days	Others	Qualitative: Focus groups and interviews (semi-structured)	Positive effects	No
10	Brody & Ryu	SDG	An interdisciplinary graduate course on sustainable development (SD) employed a problem-based learning (PBL) approach that emphasizes solving real-world issues on the topics of sustainable development (SD). The SD course was reading intensive and discussion based with many in-class group exercises. At the end of the semester, students had to complete a final project on a place-based sustainability problem of their choice.	USA	1 semester	Teacher(s)	Quantitative *: A pretest-posttest design with a nonequivalent control group was implemented. A post-test (Likert scale) was implemented.	Positive effects	Yes

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
11	Carrell	Diversity	University students enrolled in "Fundamentals of Speech Communication," "TV Production and Direction," "Interpersonal Communication" (used for control purposes only), and "Intercultural Communication" courses. Two course sections for each participating basic course instructor were randomly selected as control groups, and two course sections were randomly selected as experimental groups. Two basic course instructors infused diversity into the public speaking portion of their experimental sections, and the other two basic course instructors infused diversity into the interpersonal instruction of their experimental sections.	USA	1 semester	Teacher(s)	Quantitative *: Pre-test and post-test (Likert scale)	Positive effects	No
12	Castellanos & Cole	Diversity	This study examined the effect of diversity course content clusters on students' civic engagement. This study utilized the following genre clusters: curriculum reform, multicultural competence, societal equity, and equity pedagogy. Student's civic engagement is defined as a value of and commitment to social action, social justice orientation, leadership skills, perspective taking, and intercultural understanding.	USA	4 years	Teacher(s)	Quantitative **: Survey (4-point Likert scale)	Positive effects	Yes
13	Chatzifotiou	SDG	Environmental education in the English national curriculum.	England	N/A	Teacher(s)	Qualitative: Interviews (semi-structured)	Positive effects	Yes
14	Coşkun	Peace education	This study describes the model for lesson planning on peace education in teacher training. The used resources aim to improve the value of the materials available to teachers.	Turkey	3 years	Others	Qualitative: Document research technique	N/A	Yes
15	Critelli, Lewis & Méndez-López	Human rights	This study examines one course conducted collaboratively between two universities based in the US and Mexico. The course was interdisciplinary and applied to the perspectives of law and social work. Lectures, readings and discussion were utilized.	USA	14 online module sessions/1 term	Teacher(s)	Mixed methods: Course evaluation and survey (fixed-choice and open-ended questions)	Positive effects	No

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
16	de Kraker, Dlouhá, Henderson & Kapitulčinová	SDG	European virtual seminar on sustainable development (EVS) was a web-based course offered annually since 2001 by a partnership of nine universities in Europe. The 5-month long course is offered to third-year bachelor and master students. Students from different countries and disciplines work together in teams on sustainability issues. EVS uses a constructivist pedagogical approach.	Europe	15 years	Others	Quantitative: Questionnaire	Positive effects	Yes
17	Grayson & Martin	Gender equality	A training model designed to increase the achievement of both boys and girls and to reduce teachers' gender-stereotyped behavior. Training includes workshops, peer observations and feedback.	USA	1 year	Others	Qualitative: Classroom observations, pre- and post-tests in mathematics, reading and language arts, and questionnaire	Positive effects	No
18	Hood & Parker	Diversity	Assessment of existing undergraduate teacher education programs focusing on diversity.	USA	1 year	Teacher(s)	Qualitative: Interviews, questionnaire (semi-structured), document reviews, program evaluations	Negative effects	No
19	Hunt	Diversity	Schools for Future Youth is a three year EU Erasmus+ funded project to build the skills and capacity of teachers and youth to use global citizenship to improve learning both in and out of the classroom. The project was a collaboration between NGOs in four countries (Cyprus, Italy, Poland and the UK), who recruited and worked with schools to develop and test educational resources and approaches both in and outside of the formal curriculum.	Cyprus	3 years	Teacher(s)	Mixed methods *: Survey and interviews	Positive effects	No

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
20	Kadis & Avraamidou	SD	The project, called CAFE (Camping, Fitness, and Education), was to engage participants in a series of activities designed to provide them with knowledge about local environmental issues while aiming to build trust between the two main communities living in Cyprus: Greek Cypriot and Turkish Cypriot. The project involved a series of youth camps and field trips in the northern and southern parts of the island, where the habitats, fauna, and flora of the areas visited were presented to participants by environmental experts.	Cyprus	3 days	Teacher(s)	Mixed methods: A large-scale quantitative report and interviews (semi-structured)	Positive effects	No
21	Kaya	SD	A program using Six thinking hats technique which was developed by Edward De Bono and aims to promote articulation of different opinions and thinking differently in different situations. This technique is based on using six different thinking aspects: objectivity, organization, subjective feelings, creativity, positive and negative sides.	Turkey	8 weeks	Others	Mixed methods **: Success test, interviews, pre- and post-test, permanency test conducted one month later	Positive effects	No
22	Kesten, Brodsky Schur & Gürsoy	Human rights	One seventh grade social studies lesson on human rights is taught in a public school in Istanbul, Turkey.	Turkey	1 lesson	Teacher(s)	Qualitative: Lesson transcription and lesson analysis from three different perspectives	N/A	No
23	Kieu & Singer	SDG	Five NGO-led courses to promote student teachers' sustainability competencies, including systems thinking, future thinking, values thinking and an action-orientation.	Vietnam	Varied from 2 days to 4 weeks	NGO employee(s)	Qualitative: Interviews and focus groups	Positive effects	No
24	Kieu, Singer & Gannon	SDG	Various kinds of university's sustainability-related courses and informal activities in teacher education institutions.	Vietnam	Various	Teacher(s)	Qualitative: Interviews and focus groups	Positive effects	No

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
25	Kubal, Meyler, Stone & Mauney	Diversity	To promote a greater appreciation for diversity on campus, in schools and communities across Nebraska, this program brings artists from diverse cultural backgrounds for campus residency to share their culture and art with students and special community group. The program schedules artists to speak in classrooms regarding the union of their ethnicity and their art.	USA	1–5 weeks	Teacher(s)	Mixed methods: Questionnaire (4-point Likert; closed-ended and open-ended questions) and observations	Positive effects	No
26	Kvam, Considine & Palmeri	Diversity	This study investigates student perceptions of a communication studies department's diversity-focused learning outcome. The program includes study abroad trips and public events on campus to encounter diverse groups.	USA	N/A	Teacher(s)	Qualitative: Self-reflective essays and focus group interviews	N/A	No
27	Leh, Grau & Guiseppe	Diversity	This study evaluates the effects of online intercultural exchange (OIE) to foster the development of cultural competence among pre-service teachers in Germany and the US.	USA	22 days	Others	Qualitative: Pre- and post- program surveys (open-ended questions), written reflections and classroom observations	Positive effects	No
28	Nagengast	Human rights	Three college-level, short-term study abroad courses in the Gambia and in Vietnam were assessed. All courses required students to address various aspects of human rights, such as liberalism, women's rights, the right to development, communalism, ethnocentrism, and ethnorelativism.	USA	3 years	Teacher(s)	Mixed methods: Pre- and post-trip surveys (5-point Likert scale) and after trip open-ended essays	Positive effects	Yes
29	Olowo	Peace education	This article investigates the effects of integrating peace education into the educational system in Nigeria by implementing a survey of secondary school teacher's opinions about peace education.	Nigeria	N/A	N/A	Quantitative: Questionnaire (4-point Likert)	Positive effects	Yes
30	Olsson & Gericke (2016)	SDG	ESD certified schools, which were guaranteed by the certifying organizations as schools that apply an ESD approach.	Sweden	N/A	Others	Quantitative: Questionnaire (5-point Likert-scale)	Positive effects	Yes

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
31	Olsson & Gericke (2017)	SDG	ESD oriented schools, which adopted an explicit ESD-oriented approach for which they have received certifications or awards.	Sweden	N/A	Others	Quantitative *: Questionnaire (5-point Likert-scale)	Positive effects	Yes
32	Olsson, Gericke & Chang Rundgren	SDG	ESD profile schools, i.e., participating some networks and organizations national or international that support schools to work systematically and explicitly with ESD.	Sweden	N/A	Others	Quantitative: Questionnaire (5-point Likert scale)	Positive effects	Yes
33	O'Neal	Diversity	The program intends to orient university students to their own acknowledgement of the appreciation of diversity and to gain an understanding of multiple cultural backgrounds. The course uses journals, a final exam, small group discussion, a group project, novel analysis and a short paper on oppressive conditions in a country of their choice.	USA	10 years	Teacher(s)	Qualitative: Questionnaire	Positive effects	Yes
34	Parish	Human rights	The International Baccalaureate (IB) was developed in the 1950s/1960s, for students aged 3–19, to help create a peaceful world through intercultural understanding and respect, and to address the pragmatic concerns of increasing numbers of mobile families. Three components of the IB human rights ideals are studied: identification of 'self' as a part of a common humanity; ethno-cultural empathy; and positive attitudes.	Norway	N/A	Others	Quantitative *: Survey (3 different scales were used)	Positive effects	No
35	Powers, Price-Johnson & Creative Research Associates	Peace education	The In Pursuit of Peace Curriculum was designed to teach youth the skills needed to resolve problems peacefully. It was implemented at the violence prevention "Peace camp" that included team building, guest speakers, group consensus, project planning and problem solving. Participants in grades 6–12 planned a peace project to benefit the community.	USA	1 semester	Others	Quantitative: Pre- and post- survey	Positive effects	Yes

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
36	Qablan, Abu Al-ruz, Khasawneh, & Al-Omari	SDG	This study assessed the attitudes and classroom practices of environmental science faculty members in Jordanian public universities toward education for sustainability.	Jordan	2 weeks	Others	Mixed methods: Surveys (5-point Likert scale), interviews (semi-structured) and classroom observations	Negative effects	Yes
37	Remington-Doucette & Musgrove	SDG	An introductory sustainability course designed to increase the five key sustainability competencies in the students. The course involved weekly lectures and readings in which these fundamental concepts were explained. For their final group project, students were asked to choose a real-world sustainability problem and, using the sustainability problem-solving methodologies, analyze and propose a solution to their problem.	USA	1 semester	Teacher(s)	Quantitative *: Pre- and post-test	Positive effects	Yes
38	Sağdıç & Sahin	SDG	This was a survey of elementary school teachers' opinions, beliefs, perceived barriers and teaching strategies with respect to education for sustainable development.	Turkey	N/A	Teacher(s)	Quantitative: Survey (5-point Likert scale)	Positive effects	Yes
39	Sağkal, Türnüklü & Totan (2012)	Peace education	This study examines the effects of Peace Education program on the six grade students' empathy levels. The research was conducted in two elementary schools in Izmir, Turkey.	Turkey	12 weeks	Others	Quantitative *: Pre- and post-test and Index of Empathy (2-point Likert scale)	Positive effects	Yes
40	Sağkal, Türnüklü & Totan (2016)	Peace education	A peace education program based on positive peace and peacebuilding strategy investigates the effects on aggression levels of middle school students.	Turkey	12 weeks	Others	Mixed methods *: Questionnaire (pre- and post-test) and interviews	Positive effects	Yes
41	Sahan & Tural	Human rights	This study examines the opinions of fourth grade teachers in Bartin, Turkey, teaching the Human Rights, Civic and Democracy course implemented in school year 2015–2016.	Turkey	1 school year	Teacher(s)	Qualitative: Interviews	Negative effects	Yes

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
42	Schuler, Fanta, Rosenkraenzer & Riess	SDG	Four different courses were designed to enhance student teachers' ability in systems thinking within the context of ESD, and to provide participants with skills to teach systems thinking in schools effectively.	Germany	14 sessions (90 min/each)	Teacher(s)	Qualitative: Achievement test and questionnaire	Positive effects	Yes
43	Schutte, Kamans, Wolfensberger & Veugelers	SDG	This was a university course consisting of 8 meetings (2 h each) and an internship (15 weeks) focusing on local-global connections, global justice and developing ethical and intercultural sensitivity through engagement in various social and cultural contexts.	The Netherlands	4 months	Teacher(s)	Mixed methods *: Questionnaire (pre- and post-test), interviews and blogs	Positive effects	No
44	Schweisfurth	Diversity	The SP3 course is organized into three strands: informed citizenship, purposeful citizenship, and active citizenship. There are references to all levels of community, from local through provincial, national and international, with emphasis on Canadian structures and identity.	Canada	Since 1999	Teacher(s)	Qualitative: Documentary analysis, classroom observation, and interviews	Positive effects	No
45	Scott & Sims	Diversity	This study describes two programs: The Diverse Voices Conference (DVC) and The Diverse Student Scholars (DVS) Program. DVC is a one-day annual conference that uses a variety of cultural influences such as poetry, music, singing and dance to enhance the experience of attendees. DVS promotes community engagement, networking opportunities, critical thinking and professional presentation skills.	USA	20 years and 10 years	Teacher(s)	Quantitative: Survey	Positive effects	No

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
46	Sebba & Robinson	Diversity	UNICEF UK's Rights Respecting Schools Award (RRSA) started in 2004 and more than 1600 primary and secondary schools are registered for the RRSA in England, Wales, Scotland and Northern Ireland. Schools use the UN Convention on the Rights of the Child (CRC) as their values framework. A school works through two levels, self-evaluating their progress. When they believe they have met the standards, an external assessment takes place and if standards are met, a certificate is awarded.	UK	3 years	Others	Mixed methods: Interviews, document reviews and descriptive quantitative data	Positive effects	Yes
47	Shephard, Harraway, Lovelock, Mirosa, Skeaff, Slooten, Strack, Furnari, Jowett & Deaker	SDG	This article discusses the assessment of education for sustainable development (ESD) competencies. The competencies are described as dispositions. The students need to have the values and attitudes, emotion or desire, necessary to influence their behavior so that they become environmentally responsible doers, appropriate for the mission of ESD.	New Zealand	5 years	Teacher(s)	Quantitative: Questionnaire	Positive effects	Yes
48	Sims & Falkenberg	SDG	The study looks at 4 case studies of universities integration of ESD into graduate and undergraduate courses. Each case study varied in their design, development and delivery of ESD.	Canada	5 months	Teacher(s)	Qualitative: Interviews (semi-structured)	N/A	No
49	Singer-Brodowski, Grossmann, Bartke, Huning, Weinsziehr & Hagemann	SDG	Five higher-education courses were investigated to identify five-key competencies and processes for ESD: system-thinking, normative, anticipatory, strategic and interpersonal. The courses varied in their development, implementation and evaluation of the competencies.	Germany	1–2 semesters	Teacher(s)	Qualitative: Comparative case study with student and teacher reflections	Positive effects	Yes

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
50	Somers	Gender equality and diversity	The program aims to educate and equip young people as global citizens, with a particular focus on promoting gender equality and valuing diverse identities.	Ireland	1 week	NGO employee(s)	Quantitative: Surveys	Positive and negative effects	No
51	Spahiu & Lindemann-Matthies	SDG	An ESD toolkit was designed in response to a new strategy for sustainable development in Kosovo, which covered a wide-range of locally-relevant topics and activities. The purpose of the program was to determine (1) whether the toolkit for ESD is suitable for use in schools and, if not, for what reasons; (2) whether the toolkit and a one-day in-service workshop will help to improve high school teachers' environmental knowledge, understanding of ESD, and use of methodological approaches suitable for ESD in Kosovo; and (3) whether teacher-talk will decrease and pupil-talk will increase in class after introducing the toolkit.	Kosovo	1 day	Teacher(s)	Qualitative: Teacher observations	Positive effects	Yes
52	Sperandio, Grudzinski-Hall & Stewart-Gambino	Diversity	The Global Citizenship Program (GCP) was structured around student engagements through practical and experiential learning such as: study abroad, summer opportunities to participate in NGOs, as well as faculty and student exchanges.	USA	4 years	Teacher(s)	Quantitative: Surveys	Positive effects	No
53	Turnsek	Diversity	This study describes the 120-hour long Antidiscrimination and Diversity training that took place during a two-year post graduate Early Childhood Education study program. The first part of the program targeted participants' perceptions on the topic, followed by the exploration of written and spoken messages that influenced their thinking about minority groups.	Slovenia	120 days	Teacher(s)	Quantitative *: Evaluation pre-questionnaire	Positive effects	Yes

Table A1. *Cont.*

#	Author(s)	Thematic Focus	Program Description	Geographic Focus	Duration	Implementer	Methods	Outcomes	Instrument Available
54	Youngs	Diversity	Teaching for Urban Contexts (TUC) was an experimental program that trained three cohorts of prospective teachers. The TUC program employed several strategies to prepare teachers to work with diverse populations.	USA	3 years	Teacher(s)	Qualitative: Observations and interviews	Positive effects	No
55	Zachariou & Valanides	SDG	The purpose of the outdoor program was to promote Education for Sustainable Development (ESD) in primary education and investigate its impact on primary students teachers knowledge and attitudes towards sustainable issues, and on their personal responsibility and willingness to be involved in ESD.	Cyprus	2 months	Teacher(s)	Qualitative: Personal reports	Positive effects	No
56	Zembylas, Charalambous & Charalambous	Human rights	A new school curriculum was put into effect in Cyprus in 2010. This new curriculum included an important shift in the discussion of human rights. Human rights values are infused into many school subjects.	Cyprus	Since 2010	Teacher(s)	Qualitative: Interviews (semi-structured), lesson plans and observations	Negative effects	No

Notes: * Statistically significant effects. ** Experimental design with statistically significant effects.

References

1. UNESCO. Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4. 2016. Available online: https://unesdoc.unesco.org/ark:/48223/pf0000245656 (accessed on 4 February 2020).

2. United Nations. Progress of Goal 4 in 2019. Sustainable Development Goals Knowledge Platform. N.d. Available online: https://sustainabledevelopment.un.org/sdg4 (accessed on 4 February 2020).

3. UNESCO. Measurement Strategy for SDG Target 4.7: Proposal by GAML Task Force 4.7. 2017. Available online: http://uis.unesco.org/sites/default/files/documents/gaml4-measurement-strategy-sdg-target4.7.pdf (accessed on 4 February 2020).

4. Goren, H.; Yemini, M. Global Citizenship Education Redefined—A Systematic Review of Empirical Studies on Global Citizenship Education. *Int. J. Educ. Res.* **2017**, *82*, 170–183. [CrossRef]

5. O'Flaherty, J.; Liddy, M. The Impact of Development Education and Education for Sustainable Development Interventions: A Synthesis of the Research. *Environ. Educ. Res.* **2018**, *24*, 1031–1049. [CrossRef]

6. Wiek, A.; Withycombe, L.; Redman, C.L. Key Competencies in Sustainability: A Reference Framework for Academic Program Development. *Sustain. Sci.* **2011**, *6*, 203–218. [CrossRef]

7. Tilbury, D.; Janousek, S. *Development of a National Approach to Monitoring, Assessment and Reporting on the Decade of Education for Sustainable Development: Summarizing Documented Experiences on the Development of ESD Indicators and Networking with Expert Groups on ESD Indicators*; Australian Research Institute of Education for Sustainability and Australian Government Department of the Environment and Water Resources: Sydney, Australia, 2006.

8. Matsumoto, M. Schooling's 'Contribution' to Contemporary Violent Conflict: Review of Theoretical Ideas and Case Studies in the Field of Education and Conflict. *Res. Comp. Int. Educ.* **2015**, *10*, 238–256. [CrossRef]

9. Tomlinson, K.; Benefield, P. *Education and Conflict: Research and Research Possibilities*; National Foundation for Educational Research: Slough, UK, 2005.

10. Center for Universal Education at Brookings. *Measuring Global Citizenship Education: A collection of Practices and Tools*; Brookings Institute: Washington, DC, USA, 2017.

11. Oxfam. Education for Global Citizenship: A Guide for Schools. 2015. Available online: https://oxfamwebcdn.azureedge.net/-/media/Files/Education/Global%20Citizenship/Global_Citizenship_Schools_WEB.ashx (accessed on 4 February 2020).

12. Chiu, C.L.; Sayman, D.; Carrero, K.M.; Gibbon, T.; Zolkoski, S.M.; Lusk, M.E. Developing Culturally Competent Preservice Teachers. *Multicult. Perspect.* **2017**, *19*, 47–52. [CrossRef]

13. Reid, J.L.; Kagan, S.L.; Scott-Little, C. New Understandings of Cultural Diversity and the Implications for Early Childhood Policy, Pedagogy, and Practice. *Early Child Dev. Care* **2019**, *189*, 976–989. [CrossRef]

14. Tomlinson, C.A.; Brighton, C.; Hertberg, H.; Callahan, C.M.; Moon, T.R.; Brimijoin, K.; Conover, L.A.; Reynolds, T. Differentiating Instruction in Response to Student Readiness, Interest, and Learning Profile in Academically Diverse Classrooms: A Review of Literature. *J. Educ. Gift.* **2003**, *27*, 119–145. [CrossRef]

15. Bourn, D; Hunt, F.; Bamber, P. A Review of Education for Sustainable Development and Global Citizenship Education in Teacher Education. Background paper for the 2017/8 Global Education Monitoring Report. 2017. Available online: https://www.ucl.ac.uk/ioe/sites/ioe/files/bournhuntbamber.pdf (accessed on 4 February 2020).

16. Mundy, K.; Manion, C. Global Education in Canadian Elementary Schools: An Exploratory Study. *Can. J. Educ. Rev. Can. De L'éducation* **2008**, *31*, 941–974.

17. Tibbits, F.; Kirschlaeger, P. Perspectives of Research on Human Rights Education. *J. Hum. Rights Educ.* **2010**, *2*, 8–29.

18. Unterhalter, E.; Arnot, M.; Lloyd, C.; Moletsane, L.; Murphy-Graham, E.; North, A.; Parkes, J.; Saito, M. *Interventions to Enhance Girls Education and Gender Equality. Education Rigorous Literature Review*; Department for International Development: London, UK, 2014.

19. Council of Europe; OSCE/ODIHR; UNESCO; OHCHR. Human Rights Education in the School Systems of Europe, Central Asia and North America: A Compendium of Good Practice. Warsaw, 2009. Available online: https://www.ohchr.org/Documents/Publications/CompendiumHRE.pdf (accessed on 4 February 2020).

20. Shel, T. Gender and Inequity in Education: Literature Review. Background paper for the 2008 Global Monitoring Report. 2007. Available online: https://unesdoc.unesco.org/ark:/48223/pf0000155580 (accessed on 4 February 2020).

21. de Kraker, J.; Dlouhá, J.; Henderson, L.M.; Kapitulcinová, D. The European Virtual Seminar on Sustainable Development as an Opportunity for Staff ESD Competence Development within University Curricula. *Int. J. Sustain. High. Educ.* **2017**, *18*, 758–771. [CrossRef]

22. Schutte, I.W.; Kamans, E.; Wolfensberger, M.V.C.; Veugelers, W. Preparing Students for Global Citizenship: The Effects of a Dutch Undergraduate Honors Course. *Educ. Res. Int.* **2017**, *2017*, 1–12. [CrossRef]

23. Shephard, K.; Harraway, J.; Lovelock, B.; Mirosa, M.; Skeaff, S.; Slooten, L.; Strack, M.; Furnari, M.; Jowett, T.; Deaker, L. Seeking Learning Outcomes Appropriate for 'Education for Sustainable Development' and for Higher Education. *Assess Eval. High. Educ.* **2015**, *40*, 855–866. [CrossRef]

24. Sims, L.; Falkenberg, T. Developing Competencies for Education for Sustainable Development: A Case Study of Canadian Faculties of Education. *Int. J. High. Educ.* **2013**, *2*, 1–14. [CrossRef]

25. Zachariou, A.; Valanides, N. Education for Sustainable Development: The Impact of an Out-Door Program on Student Teachers. *Sci. Educ. Int.* **2006**, *17*, 187–203.

26. Kadis, C.; Avraamidou, L. Outdoors Environmental Education for the Service of Peace: Lessons from a 2 Year Youth Program for Reconciliation in Cyprus. *Sci. Educ. Rev.* **2008**, *7*, 64–71.

27. Brody, S.D.; Ryu, H.C. Measuring the Educational Impacts of a Graduate Course on Sustainable Development. *Environ. Educ. Res.* **2006**, *12*, 179–199. [CrossRef]

28. Kieu, T.K.; Singer, J. Involvement of NGOs in Training Teachers in Education for Sustainable Development in Vietnam: A Case Study. *Eur. J. Sustain. Dev.* **2017**, *6*, 153–166. [CrossRef]

29. Andersson, K.; Jagers, S.; Lindskog, A.; Martinsson, J. Learning for the Future? Effects of Education for Sustainable Development (ESD) on Teacher Education Students. *Sustainability* **2013**, *5*, 5135–5152. [CrossRef]

30. Sağdıç, A.; Şahin, E. An Assessment of Turkish Elementary Teachers in the Context of Education for Sustainable Development. *Int. Electron. J. Environ. Educ.* **2016**, *6*, 141–155. [CrossRef]

31. Kieu, T.K.; Singer, J.; Gannon, T.J. Education for Sustainable Development in Vietnam: Lessons Learned from Teacher Education. *Int. J. Sustain. High. Educ.* **2016**, *17*, 853–874. [CrossRef]

32. Kaya, M.F. The Effect of Six Thinking Hats on Student Success in Teaching Subjects Related to Sustainable Development in Geography Classes. *Educ. Sci. Theory Pract.* **2013**, *13*, 1134–1139.

33. Spahiu, M.; Lindemann-Matthies, P. Effect of a Toolkit and a One-Day Teacher Education Workshop on ESD Teaching Content and Methods—A Study from Kosovo. *Sustainability* **2015**, *7*, 8051–8066. [CrossRef]

34. Singer-Brodowski, M.; Grossmann, K.; Bartke, S.; Huning, S.; Weinsziehr, T.; Hagemann, N. Competency-Oriented Education for Sustainable Development. *Int. J. Sustain. High. Educ.* **2018**, *19*, 1299–1316. [CrossRef]

35. Olsson, D.; Gericke, N. The Effect of Gender on Students Sustainability Consciousness: A Nationwide Swedish Study. *J. Environ. Educ.* **2017**, *48*, 357–370. [CrossRef]

36. Remington-Doucette, S.; Musgrove, S. Variation in Sustainability Competency Development According to Age, Gender, and Disciplinary Affiliation. *Int. J. Sustain. High. Educ.* **2015**, *16*, 537–575. [CrossRef]

37. Andersson, K. Starting the Pluralistic Tradition of Teaching? Effects of Education for Sustainable Development (ESD) on Pre-Service Teachers' Views on Teaching about Sustainable Development. *Environ. Educ. Res.* **2017**, *23*, 436–449. [CrossRef]

38. Schuler, S.; Fanta, D.; Rosenkraenzer, F.; Riess, W. Systems Thinking within the Scope of Education for Sustainable Development (ESD)—A Heuristic Competence Model as a Basis for (Science) Teacher Education. *J. Geogr. High. Educ.* **2018**, *42*, 192–204. [CrossRef]

39. Qablan, A.; Al-Ruz, J.; Khasawneh, S.; Al-Omari, A. Education for Sustainable Development: Liberation or Indoctrination? An Assessment of Faculty Members' Attitudes and Classroom Practices. *Int. J. Environ. Sci. Educ.* **2009**, *4*, 401–417.

40. Kubal, T.; Meyler, D.; Stone, R.T.; Mauney, T.T. Teaching Diversity and Learning Outcomes: Bringing Lived Experience into the Classroom. *Teach. Sociol.* **2003**, *31*, 441–455. [CrossRef]

41. Kvam, D.S.; Considine, J.R.; Palmeri, T. Defining Diversity: An Analysis of Student Stakeholders' Perceptions of a Diversity-Focused Learning Outcome. *Commun. Educ.* **2018**, *67*, 287–307. [CrossRef]

42. Leh, J.M.; Grau, M.; Guiseppe, J.A. Navigating the Development of Pre-Service Teachers' Intercultural Competence and Understanding of Diversity. *J. Multicult. Educ.* **2015**, *9*, 98–110. [CrossRef]

43. Scott, C.L.; Sims, J.D. Exemplary Models of Faculty-Driven Transformative Diversity Education Initiatives: Implications for Metropolitan Universities. *Metrop. Univ.* **2018**, *29*, 108–122. [CrossRef]

44. Sperandio, J.; Grudzinski-Hall, M.; Stewart-Gambino, H. Developing an Undergraduate Global Citizenship Program: Challenges of Definition and Assessment. *Int. J. Teach. Learn. High. Educ.* **2010**, *22*, 12–22.

45. Turnsek, N. Enjoying Cultural Differences Assists Teachers in Learning about Diversity and Equality. An Evaluation of Antidiscrimination and Diversity Training. *Cent. Educ. Policy Stud. J.* **2013**, *3*, 117–138.

46. Youngs, P. *Challenges in Studying the Impact of Integrated Approaches to Preparing Teachers for Diversity*; Spencer Foundation: Chicago, IL, USA, 1999.

47. Ball, A.F. Preparing Teachers for Diversity: Lessons Learned from the US and South Africa. *Teach. Teach. Educ.* **2000**, *16*, 491–509. [CrossRef]

48. Hunt, F. Schools for Future Youth Evaluation Report: Developing Young People as Active Global Citizens. 2017. Available online: http://discovery.ucl.ac.uk/10030832/9/Hunt_DERC-Report17-SFYouth-FrancesHunt.pdf (accessed on 4 February 2020).

49. Somers, E. News Versus Newsfeed: The Impact of Social Media on Global Citizenship Education. *Policy Pract. Dev. Educ. Rev.* **2017**, *24*, 126–137.

50. Nagengast, E. An Assessment of Learning Outcomes in Short-Term Study Abroad and Human Rights Education. *Int. Res. Rev. J. Phi Beta Delta* **2017**, *7*, 77–92.

51. Sebba, J.; Robinson, C. *Evaluation of UNICEF UK's Rights Respecting School Award. Final Report*; UNICEF: London, UK, 2010.

52. O'Neal, G.S. Teaching Note: Self-Assessment and Dialogue as Tools for Appreciating Diversity. *J. Soc. Work Educ.* **2012**, *48*, 159–166. [CrossRef]

53. Castellanos, M.; Cole, D. Disentangling the Impact of Diversity Courses: Examining the Influence of Diversity Course Content on Students' Civic Engagement. *J. Coll. Stud. Dev.* **2015**, *56*, 794–811. [CrossRef]

54. Appleyard, N.; McLean, L.R. Expecting the Exceptional: Pre-Service Professional Development in Global Citizenship Education. *Int. J. Prog. Educ.* **2011**, *7*, 6–32.

55. Carrell, L.J. Diversity in the Communication Curriculum: Impact on Student Empathy. *Commun. Educ.* **1997**, *46*, 234–244. [CrossRef]

56. Bell, L.C. A Longitudinal Measure of the Perceptual Impact of a Cultural Diversity Teaching Practicum on the Interpersonal Competency of Student Teachers. *J. Agric. Educ.* **2000**, *41*, 11–18. [CrossRef]

57. Baker, J.; Hunter, J. Teaching for a Safer World: Lessons from the World Peace Game. *Indep. Sch.* **2013**, *72*, 42–46.

58. Başaran, S.D.; Karakurt, S.Ö. Development and Evaluation of the Efficiency of In-Service Training Program with the Theme of Peace Education. *Univ. J. Educ. Res.* **2017**, *5*, 1425–1434. [CrossRef]

59. Sağkal, A.S.; Türnüklü, A.; Totan, T. Empathy for Interpersonal Peace: Effects of Peace Education on Empathy Skills. *Educ. Sci. Theory Pract.* **2012**, *12*, 1454–1460.

60. Olowo, O. Effects of Integrating Peace Education in the Nigeria Education System. *J. Educ. Pract.* **2016**, *7*, 9–14.

61. Sağkal, A.S.; Türnüklü, A.; Totan, T. Peace Education's Effects on Aggression: A Mixed Method Study. *Eurasian J. Educ. Res.* **2016**, *16*, 45–68. [CrossRef]

62. Coşkun, H. Description of a Model for Lesson Planning on Peace Education in Teacher Training. *J. Educ. Cult. Soc.* **2018**, *9*, 118–142. [CrossRef]

63. Powers, S.; Price-Johnson, C.; Creative Research Associates, I. *Teens in Action: In Pursuit of Peace Curriculum*; Final Evaluation Report. S.I.: Distributed by ERIC Clearinghouse; Creative Research Associates: Tucson, AZ, USA, 2002.

64. Critelli, F.; Lewis, L.; Méndez-López, A. Educating for an Inclusive World: Lessons Learned from a Globally Networked Human Rights and Disability Course for Social Work and Law Students. *J. Teach. Soc. Work* **2017**, *37*, 121–137. [CrossRef]

65. Parish, K. A Measure of Human Rights Competence in Students Enrolled on the International Baccalaureate Diploma Programme. *Oxf. Rev. Educ.* **2019**, *45*, 390–404. [CrossRef]

66. Kesten, A.; Brodsky Schur, J.; Gürsoy, K. Teaching Human Rights in Turkey: Commentaries on a Single Lesson from Multiple Perspectives. *J. Soc. Sci. Educ.* **2014**, *13*, 146–156.

67. Şahan, G.; Tural, A. Evaluation of Human Rights, Citizenship and Democracy Course by Teachers Vision. *World J. Educ.* **2018**, *8*, 46–53. [CrossRef]

68. Zembylas, M.; Charalambous, C.; Charalambous, P. Teachers' Pedagogical Perspectives and Teaching Practices on Human Rights in Cyprus: An Empirical Exploration and Implications for Human Rights Education. *Pedagog. Int. J.* **2016**, *11*, 197–217. [CrossRef]

69. Grayson, D.A.; Martin, M.D. *Gender Expectations and Student Achievement: A Teacher Training Program Addressing Gender Disparity in the Classroom*; American Educational Research Association: New Orleans, LA, USA, 1984.

70. Acard-Erdol, T.; Gözütok, F.D. Development of Gender Equality Curriculum and its Reflective Assessment. *Turk. J. Educ.* **2018**, *7*, 117–135. [CrossRef]

71. Edwards, D.B., Jr. *Global Education Policy, Impact Evaluations, and Alternatives: The Political Economy of Knowledge Production*; Palgrave MacMillan: New York, NY, USA, 2018.

72. UNESCO. SDG 4 Global and Thematic Indicator Lists. 2017. Available online: http://tcg.uis.unesco.org/sdg-4-global-and-thematic-indicator-lists/ (accessed on 4 February 2020).

73. Yemini, M.; Tibbitts, F.; Goren, H. Trends and Caveats: Review of Literature on Global Citizenship Education in Teacher Training. *Teach. Teach. Educ.* **2019**, *77*, 77–89. [CrossRef]

74. Unterhalter, E. Silences, Stereotypes and Local Selection: Reflections for the SDGs on Some Experiences with the MDGs and EFA. In *Global Education Policy and International Development: New Agendas, Issues and Programmes*, 2nd ed.; Verger, T., Noelli, M., Kosar-Altinyelken, H., Eds.; Continuum: New York, NY, USA, 2018; pp. 75–95.