The intersection of environmental and sustainability education, and character education: An instrumental case study

Although fostering values is promoted within environmental and sustainability education (ESE) and a shift in values seen as essential for a sustainable future, recent international findings indicate this aspect of ESE is being neglected (UNESCO, 2019). Previous research has shown there to be common ground between ESE and the field of character education (CE), a form of values education. Bringing together these two strands of theory and practice has the potential to be fruitful in terms of strengthening current, and introducing new, practices in both fields, particularly through drawing on existing evidence-based strategies within CE to inform ESE. While there has been some work in this regard, this has been almost exclusively theoretical and there has been little research regarding the *practice* of such integration. This paper details an instrumental case study exploring an existing case of where ESE and CE come together in practice. A study was conducted at a Scottish, independent, all-ages, holistic education-oriented school, exploring how ESE is carried out. Data were gathered via teacher interviews, school observations, field notes, and document analysis. Thematic analysis revealed four themes: the school as a sustainable organism; holistic learning; fostering a connectedness with nature; and nurturing the whole person. The data were then analysed from a CE perspective revealing multiple points of ESE-CE intersection e.g. school climate/ethos, role-modelling, and service-learning. The findings reveal commonalities between ESE and CE and provide examples of integrated ESE-CE practice, demonstrating potential for collaboration or shared ESE-CE practice. Avenues for further research are suggested.

Key Insights:

What is the main issue that the paper addresses?
Although fostering values is promoted within environmental and sustainability education (ESE) and a shift in values seen as essential for a sustainable future, recent UNESCO (2019) findings indicate this aspect of ESE is being neglected. Taking an interdisciplinary approach, insights from character education (CE) were sought.

What are the main insights that the paper provides?

This paper presents an instrumental case study revealing how ESE and CE intersect in practice at a Scottish all-ages school through e.g. school climate/ethos, role-modelling, and service-learning, demonstrating potential for future collaboration and shared or integrated ESE-CE practice.

Introduction

The increasing urgency and awareness of environmental and sustainability issues, such as climate change, biodiversity loss, and rising inequality, underlines the importance of environmental and sustainability education (ESE[1]) and has resulted in growing momentum in policy, research, and practice over recent decades. Most forms of ESE refer to education that fosters the development of knowledge, skills, attitudes, and values that will empower learners to contribute to sustainability and respond to local and global challenges (UNESCO, 2019, 2021). This research focuses on the values education aspect of ESE. A shift in values is seen as essential for a sustainable future, and while fostering values is promoted within ESE, recent research indicates this aspect of ESE is being neglected (UNESCO, 2019).

Character education (CE) is a form of values education, and a distinct field of practice and research, that has had a resurgence of interest in recent years (Kristjánsson, 2013). Research has shown there to be common ground between CE and ESE (Berkowitz, 2017; Cafaro, 2001; Hursthouse, 2007; Jordan, 2021; Jordan & Kristjánsson, 2017; Sandler, 2006). However, to date there has been little crossover between the two fields meaning valuable insights are confined to their respective silos, and potential collaboration and shared practice are overlooked.

This paper takes the stance that bringing together these two strands of research, theory and practice would be fruitful in terms of strengthening current understanding and practices, particularly through drawing on existing evidence-based strategies and methods within CE to inform ESE. While there has been some work in this regard, it has been almost exclusively theoretical and there has been little research regarding the *practice* of such integration. To this end, this paper details an instrumental case study exploring where ESE and CE come together in *practice*. A case study was conducted at a Scottish, independent, all-ages, holistic education-oriented school with a guiding philosophy of Steiner Waldorf education and an emphasis on craft-based education and outdoor education. The paper examines the findings in terms of what can be learnt about potential ESE-CE shared practice and integration, including suggestions for future ESE and CE practice and research e.g. sustainability framed service-learning, role-modelling, and fostering a connection to nature.

The paper begins with a discussion of values education and its role within ESE, then points to existing work on ESE-CE crossover. Following an overview of the case study's context and methodology, the paper reports on the thematic analysis of the data (gathered via teacher interviews, observations, field notes, and document analysis). An analysis of the data from a CE perspective is then presented, bringing the themes into conversation with existing CE literatures, in particular drawing on Berkowitz's (2011, 2017) reviews of empirical research on 'what works in CE'. The paper concludes by discussing the implications of this work in terms of future ESE and CE practice and research.

Values and values education

Values are fundamental convictions and abstract motivations that act as guiding principles in people's lives, shaping thoughts and attitudes, and guiding actions and behaviour (Halstead & Taylor, 2000; Leiserowitz et al., 2006; Schwartz, 2007; Schwartz et al., 2012). Examples of values are honesty, broadmindedness, and compassion. Values are 'acquired both through socialization to dominant group values and through the unique learning experiences of individuals' (Schwartz, 1994, p. 21). A substantial body of psychological research has found

values, and closely related goals, to have a significant effect on a variety of environmental and sustainability-related attitudes and behaviours e.g. levels of consumption, materialism, ecological footprints, pro-ecological behaviour, ecocentrism vs. anthropocentrism (Corral-Verdugo et al., 2015; Kasser, 2011, 2016; Schwartz, 2007; Schultz & Zelezny, 1999; Stern, 2000; Weinstein et al., 2009).

Values education is 'any education "in" or "about" values' (Arthur et al., 2017, p. 19). Berkowitz (2011, p. 153) explains values education as 'the attempt, within schools, to craft pedagogies and supportive structures to foster the development of positive, ethical, pro-social inclinations and competencies in youth'. In the context of ESE, Scott & Oulton's definition of 'environmental values education' brings in features of sustainability:

> We see the values which individuals hold as being those actions, ideas and ideals which are of fundamental importance to them, and which act as guides to how they feel they ought to live their lives, interacting with other people and with other species. In this sense, values education can be seen as the systematic and planned attempts by teachers to explore such issues with learners—both in the context of the formal and informal curriculum and in the ways that the school as an organisation conducts itself, both internally and in its relationships with the wider community. (1998, p. 211)

It is beyond the scope of this article to provide a thorough review of the field of values education, instead the author points readers to review and collected works, including empirical studies, by Halstead & Taylor (2000), Lovat (2011), and Lovat et al. (2011) (see also Arthur, 2020 in relation to character education). This paper will focus on the role of values education specifically within ESE.

Values education within ESE
Within the UN Decade of Education for Sustainable Development (DESD, 2005–2014), the subsequent General Action Plan (GAP), as well as the Incheon Declaration for Education 2030, the development of values (along with knowledge, skills, and attitudes) that empower learners to contribute to sustainable development and respond to local and global challenges is promoted (UNESCO, 2019, 2021). Values featured heavily throughout the UNESCO 2006 Framework for the DESD International Implementation Scheme, stating for example Education for Sustainable Development (ESD) 'is fundamentally about values, with respect at the centre: respect for others, including those of present and future generations, for difference and diversity, for the environment, for the resources of the planet we inhabit' (UNESCO, 2006, p. 4).

However, values education is contentious in the ESE field, where there is a lack of longitudinal empirical studies, and an inclination for values education to be viewed as instrumental, un-democratic, or at odds with a critical approach (Wals et al., 2008; Wals, 2011). The on-going debate has been referred to as the ESD 1 versus ESD 2 debate (Vare & Scott, 2007), or the 'instrumental' versus an 'emancipatory' approach to ESE (Wals et al., 2008; Wals, 2011; Jickling and Wals, 2013, see also Kopnina's 2012, 2014, critique of it, also Kopnina and Cherniak, 2016). It is beyond the scope of this case study paper to delve into the debate, nevertheless, this research aligns with Vare and Scott's (2007) conclusion that argues against the 'either/or debate that tends to dominate ESD discourse in favour of a yes/and approach' (p. 198) that, rather than seeing the two approaches 'as absolute opposites held apart along a continuum, or as competing sets of skills' (p. 195), considers the two approaches complimentary.

In support of the complimentary approach, in a 2018 UNESCO report, *Issues and trends in Education for Sustainable Development*, Rieckmann (2018, p. 45) noted that while

competencies, such as critical thinking, relate to the capacity for 'sustainability performance', competencies by themselves don't necessarily result in sustainable actions, and 'to transform capacities into real sustainable actions, individuals need corresponding values and motivational drivers' (see also Leiserowitz et al., 2006; Shephard, 2008) as well as supportive contextual factors that enable action (see Stern et al., 2000[2] on how values and contextual factors influence behaviour).

A 2019 UNESCO study assessed whether, and to what extent, three learning dimensions—cognitive, behavioural and socio-emotional (including values) are prioritised in ESD across compulsory education in 10 countries found 'ESD content included a greater focus on the cognitive dimension than the behavioural dimension and placed the least emphasis on the social and emotional dimension' (UNESCO, 2019, p. 8). While the study acknowledged different emphasis across countries and education levels, it concluded more attention needs to be paid to the social and emotional dimension of learning (UNESCO, 2019). The study stressed the need for all three interrelated dimensions of learning to be developed in union 'to advance a value-based and holistic approach to learning that is truly transformational' (UNESCO, 2019, p. 7). This paper takes the stance, in agreement with Rieckmann (2018) and UNESCO (2019), that values education is an essential component of ESE, and by bringing together ESE and CE, some of the concerns and uncertainties around values education in ESE may be confronted.

There appear to be common ways ESE practitioners pursue values education. Shephard (2008), reviewed existing teaching and learning activities relating to the affective learning domain (which relates to values, attitudes, emotions and motivations) in higher education, and found most activities used experiential learning e.g. discussion, peer involvement, role playing, problem-based learning, simulations, games, group analysis of case studies, expert engagement, perspective sharing via reflection. Shephard (2008) particularly stressed the 'pivotal role of role models' (p. 95) as well as the importance of service-learning in teaching affective outcomes in relation to sustainability. Similarly, Lewis et al. (2008) found hands-on, real-life projects (e.g. creating a community permaculture garden, conducting a trial for a turtle-nesting site) to be a meaningful approach to teaching values e.g. care and respect for nature, where the values are made understandable and seen to be practical rather than abstract concepts. Tudball (2010), in a study of Australian schools' good practice in values education, found service-learning a means to develop 'students' responsibility, and respect for others and the environment', and allowed students to put 'values into practice in functional and purposeful ways' (p. 787) (See also Lovat & Clement, 2016).

An established means of fostering values in relation to ESE is by providing learning experiences in nature to encourage a connection to nature and values such as respect for nature. Sobel (1996, 2017) wrote of the importance of fostering nature connection early in childhood before addressing issues such as deforestation or climate change: 'If we want children to flourish, to become truly empowered, then let us allow them to love the earth before we ask them to save it' (1996, p. 39). Carson (1965/1998) similarly urged adults to nurture the childhood sense of fascination and wonder for nature, and that the development of 'feelings' in children is in fact more important than teaching facts (see also Washington, 2018). Recent psychological research by Lumber et al. (2017) found that engaging and reflective experiences with nature led to an emotional connection to nature, a revering of nature, and related moral concern and reasoning. Meanwhile, Zelenski1 & Nisbet (2014) found nature connectedness 'strongly predicts sustainable attitudes and behaviors, and this relationship holds across many assessment tools' (p. 4; see also Whitburn et al., 2019).

Character education

In recent decades, there has been a worldwide resurgence of interest in character education (CE) (Arthur et al., 2017; Kristjánsson, 2013). CE is a subset of moral education, itself a subset of values education specifically relating to the moral sphere. CE comes in a variety of approaches, yet all seek to support the social, emotional and ethical development of students, and foster the development of positive character traits in learners, usually referred to as *virtues* (Arthur et al., 2017; Berkowitz, 2011, 2017).

Approaches to CE can be roughly divided into direct/explicit or indirect/implicit, also referred to as *taught* or *caught* CE (Arthur et al., 2017). Explicit CE is openly part of the curriculum, and generally involves direct instruction and transmission of moral content. Implicit CE instead places emphasis on school culture, ethos, and role-modelling (Arthur et al. 2017); and the pupil's active construction of moral meaning through participation in democratic practices, social interaction and moral discussion (Lapsley & Narvaez, 2007).

Despite the recent advances in both the CE and ESE fields, disciplinary boundaries continue to separate the two fields, meaning valuable insights that could be mutually beneficial remain confined to their respective silos (Ferkany, 2021). However, there have been notable exceptions of ESE-CE crossover. Berkowitz (2017) wrote of 'the centrality of CE for creating and sustaining a just world' (p. 83) and argued 'a more sustainable, just, and compassionate world will only happen if there are more people able and motivated to steer the world in that direction. This is precisely the definition of character: "characteristics that motivate and enable one to act as a competent moral agent"' (p. 93). He went on to stress the importance of knowing and implementing evidence-supported strategies, listing six principles (termed 'PRIMED') that research has found to guide effective CE:

> Prioritizing character education as a central purpose of the school; being strategic and intentional about nurturing healthy relationships among all stake-holders; using practices that lead to the internalization of values and intrinsic motivation to do good in the world; modelling the character we want to see in students; sharing power through a pedagogy of empowerment; and strategically creating the conditions that lead to positive development, especially over the long term' (Berkowitz, 2017, p. 93).

A sub-field of virtue ethics (one theoretical base for CE)[3] that is particularly relevant to ESE is that of environmental virtue ethics (EVE). Around the turn of the millennium, EVE emerged as a means of addressing environmental issues through the cultivation of virtues (character traits) relating to the environment. As outlined by Hursthouse (2007), EVE proposes the application of traditional virtues such as compassion, temperance, benevolence, etc., to the 'new field of our relations with nature' (p. 155; see also Ferkany, 2021; Sandler, 2006). The fostering of various virtues has been proposed as crucial to sustainability; virtues that 'global citizens will likely need in confronting sustainability problems' (Ferkany, 2021) e.g. justice (Curren & Metzger, 2017; Ferkany, 2021; Sandler, 2006); temperance/moderation (Curren & Metzger, 2017; Sandler, 2006; Treanor, 2014); frugality (Ferkany, 2021; Sandler, 2006); cooperativeness (Ferkany, 2021; Sandler, 2006), courage and wisdom (Curren & Metzger, 2017). Additionally, new virtues dealing explicitly with our relationship with nature have been suggested, e.g. 'attentiveness', 'respect for' and 'care of' nature (York and Becker, 2012); reverence for nature, wonder for nature (Sandler, 2006), valuing of nature (Curren & Metzger, 2019), and harmony with nature (Jordan & Kristjánsson, 2017). Hursthouse (2007) proposed the virtue of 'being rightly oriented to nature', and described how teaching a child to understand, appreciate, care for, and feel wonder for nature begins to shape a particular mindset relating to the natural world. This connects to the works of Sobel (1996, 2017) and Carson (1965/1998, see also Washington, 2018) mentioned above, as well as to research

within ESE that asserts the need for a mindset change e.g. Bonnett (2002) on 'sustainability as a frame of mind' and Sterling (2001, 2014) on ecological thinking.

Various CE practices in relation to ESE have been proposed: cross-curricular, collaborative, civic, and project-based learning, the fostering of a sense of global citizenship, ethical reflection, cooperative ethical inquiry, and discussion of case studies (Curren & Metzger, 2017, 2019); modelling of sustainability virtues by schools and teachers, communities of virtue with a school leadership and overall culture that demonstrates the virtues (Ferkany, 2021), school climate and role-modelling, experience in nature, exploring sustainability dilemmas (Jordan & Kristjánsson, 2017), and a focus not solely on individual attainment, but on the 'deep exploration and articulation of issues pertaining to sustainability' (Curren & Metzger, 2017, p. 178) and asking learners 'to think creatively about how to live flourishing lives in ways consistent with sustainability?' (Curren & Metzger, 2017, p. 68).

Curren & Metzger (2019), meanwhile, argue a 'profound orientation of education' is needed (p. 3), whereby education in sustainability would provide essential understanding and intellectual, ethical and civic virtues foundational to forming and acting from good judgement; provide instruction in the basic ethics of mutual respect and taking care to avoid harming others, as well as encouraging the valuing of nature through understanding and experience of nature.

However, ESE-CE integration remains largely theoretical, with, as yet, little overlap in terms of practice having taken place. This study aimed to explore existing *practice* in relation to potential ESE-CE integration.

Context of the case study

Holistic education is associated with the concept of 'educating the whole child' and the *heads-hands-heart* approach to learning (Miller, 2019; Singleton, 2015). Holistic education considers the emotional, social, cultural, and moral development of pupils as important as their 'academic' development. Although the approach does not have a dominant form, Forbes (1996, p. 1) found 'a number of values and perceptions that most schools claiming to be holistic would embrace': systems thinking, self-transcendence, school as community, cooperation not competition, inclusion and respect of diversity, self-determination, teacher as facilitator, critical thinking, interdisciplinary curricula, and democratic often cooperative organisation. Holistic education has a focus on fostering pupil's critical thinking *and* emotional and moral development.

One form of holistic education is Steiner Waldorf education, which forms the guiding educational philosophy of the case study school. In Steiner Waldorf education, core subjects of the curriculum are taught in interdisciplinary, thematic blocks and all lessons include a balance of artistic, practical and intellectual content (Avison & Rawson, 2014/2016; Steiner Waldorf Schools Fellowship, n.d.). Equal attention is given to the physical, emotional, intellectual, cultural and spiritual needs of each pupil according to the different phases of the child's development (Avison & Rawson, 2014/2016; Steiner Waldorf Schools Fellowship, n.d.). In accordance with Steiner's philosophy, children of different ages require different moral education approaches, e.g. with younger children the emphasis is on imitation, with older children the emphasis is on fostering judgement, intellect and practical idealism (Hether, 2001). The overarching educational goal is to provide young people the basis on which to develop into free, morally responsible, and integrated individuals. Today, there are nearly 3,000 Steiner Waldorf schools, across 70 countries (Freunde der Erziehungskunst Rudolf Steiners, 2021).

This holistic, *head-hands-heart* approach (Easton, 1997) aligns with research on the need to integrate cognitive (*head*), psychomotor/practical (*hand*) and affective (*heart*) learning in ESE (Fien, 1993/1995; Murray et al., 2014; Orr, 1992; Podger et al., 2010;

Shephard, 2008; Sipos et al., 2008; Tilbury, 1997; UNESCO, 2019). Krathwohl et al.'s (1964/1973) theory on the affective domain provides a link between the *head-hands-heart* approach and CE. Krathwohl et al. (1964) depict the affective learning domain, like the better-known cognitive learning domain, as a hierarchy of levels of learning, beginning with *Receiving*, moving upwards through *Responding*, *Valuing*, *Organising*, and finally reaching *Characterising*, which they describe in the following way:

> The individual is characterised [by] the values they have internalised and organised, such that the values become a system of attitudes and tendencies that control much of their behaviour. This internalisation and organisation of values also results in the integration of beliefs, ideas, and attitudes into a total philosophy or world view. (Belton, 2016, p. 61)

Ideas such as characterising, internalising and organising of values, and a system of attitudes and tendencies related to behaviour can be found in, and indeed are central to, CE. CE seeks to achieve morally sound affective outcomes indicating a parallel between affective learning (*heart*) and CE (see Wangaard, et al., 2014). Thus, it follows, a school that takes a *head-hands-heart* approach to education, including to ESE, will likely incorporate CE elements.

Aims and research questions
The purpose of this instrumental case study was to explore how ESE and CE might intersect in theory and practice, through examining a holistic education oriented school's approach to ESE and analysing if and how it relates to evidence-supported CE theory and practice. The following three questions guided the case study:
- How does a holistic education oriented all-ages school in Scotland carry out ESE?
- What, if any, common ground (intersection) exists between the school's ESE approach and CE theory and practice?
- What can we learn about ESE-CE integration from these findings?

Methods
Sampling method
An instrumental case study seeks to explore a particular issue or research question, and the case is chosen specifically to gain insight into and understanding of that issue/question (Simons, 2009; see also Mills, et al., 2010). This research sought to build knowledge on the issue of ESE-CE integration, and gain insight into what, if any, common ground (intersection) exists between ESE and CE practice, and related theory. The single, unique case was purposefully sampled as an example of an all-ages school that was perceived to take a holistic approach to ESE that included the values education aspect of ESE, or affective learning. The school was selected based on initial document analysis relating to school practices, approach, and its guiding educational philosophy: The school offers a curriculum 'inspired by the work of Rudolf Steiner and designed for the 21st Century' (School website, 2016), while also drawing on democratic schools, peace schools, and forest schools, and emphasises craft-based education and outdoor education. The school is a fee-paying, independent, all-ages school in Scotland, with 181 pupils, aged 3-18 at the time of study (October 2016). The seven teachers interviewed were aged between 25 and 65, two males, five females. All but two teachers were qualified Steiner-Waldorf educators, though the two who were not were participating in continuing professional development in that regard.

Being independent, the school operates outside the Scottish state school system— there are no exams at the school for example. However, the school is required adhere to the welfare and educational standards of, and be inspected by, the Scottish government agency

Education Scotland, and as such is influenced by the national education system. Learning for Sustainability (LfS) is one of the stated policy drivers for the Scottish education system, and an important component of the Curriculum for Excellence (Education Scotland, 2022). A whole-school and community approach that weaves together global citizenship, sustainable development education, and outdoor learning is promoted. Although values are mentioned in relation to LfS, within the curriculum values education falls under Religious and Moral Education (Education Scotland, 2017), where, for example, it is stipulated students are expected to be able to analyse how values such as honesty, respect and compassion might be applied in relation to moral issues and their impact on society; to discuss the importance of values e.g. compassion; and to explain the relationship between their own values and actions.

Data collection methods
Multiple methods of data collection were used to view the phenomenon from different angles, providing corroborative evidence of the data obtained and facilitating a more in-depth understanding (Bloomberg & Volpe, 2016; Simons, 2009). On-site data collection occurred across a four-day period in October 2016. Field notes were taken throughout.

Semi-structured interviews. Semi-structured interviews were used to gather data from the perspective of seven teachers (including the principal and vice principle, who were also class teachers) on their practice and the school approach regarding ESE. The starting question was: *How do you carryout, and how do you perceive the school carries out, environmental and sustainability education?* Interviews then generally followed the responses of the interviewee, but included questions asking for more detail or depth, which would also keep the discussion flowing e.g. *I'm getting an impression you go about it [ESE] in a very experiential way?* The interviews freely came to discussion of affective learning as part of ESE. The interviews were responsive to the teachers and the situation e.g. one interview resulted in an impromptu tour of the school grounds to see and discuss the projects from the outdoor school week, while another interview took place during an outdoor hiking trip and included discussion on the role of outdoor education in ESE. Interviews were recorded for transcription when possible, otherwise notes were taken and written up immediately afterwards e.g. following the hiking trip. The interview method was chosen as a means of obtaining detailed descriptions of the teachers' practice, experiences and meaning making in their own words (Bloomberg & Volpe, 2016).

Observations. Observations were carried out during school classes, outdoor activities and excursions e.g. to a recycling centre, as well as general observations of the school environment and grounds in order to gain insight into the lived experience of the school community. The general ESE provision (education *in*, *about*, and *for* the environment and sustainability) and related issues (e.g. student–teacher relationship, learner–centred approach) were the main focus of the observations. However, observations were as descriptive as possible i.e. notes attempted to capture the entirety of the experience, the observations were kept open to possibility: 'to balance foreshadowed issues with staying open to the unexpected' (Simons, 2009, p. 57), and no checklist was used. Observations were recorded through note taking generally in real-time, or immediately afterwards if necessary e.g. following an outdoor walk. The Observations were used to provide a rich description as well as to explore the norms and values of the school culture (Simons, 2009). Additionally, observations provided a crosscheck on the data obtained in interviews. Observation notes formed a main component of the formal field notes (see below).

Documents. Analysis was carried out on documents pertaining to the curriculum, practices, calendar activities, and guiding philosophy of the school. Many of these documents were accessed via the school website (approximately 20 webpages/documents, including detailed curriculum by age group, school ethos, behaviour code, and a parent booklet). The

book *The tasks and content of the Steiner-Waldorf curriculum* edited by Avison & Rawson (2014), which acted as a curriculum guide/text for the school was also analysed. Two official national school inspection reports (Education Scotland, 2014) were analysed, as well as six newspaper review articles (three describing school visits), and the school's official Facebook page, which detailed school events and festivals. These documents were used to both 'corroborate and augment evidence from other sources' (Yin, 2014, p. 107) and to add depth to the case by depicting and enriching the context and contributing to the analysis of issues (Simons, 2009).

Field notes. Field notes were taken throughout the study. While on-site, general thoughts and ideas relating to collected data and to on-going observations were jotted down in note form. More formal field notes were also made at the end of each data collection day, summing up each day's data as well as noting any apparent early emerging patterns, connections and themes, thereby providing a starting point for early analysis and interpretation (Simons, 2009; Yin, 2014).

Data analysis

Thematic analysis, according to Braun & Clarke (2006), was used to explore patterns within the entire data set (interviews, observations, documents, and field notes). The analysis was guided by the first research question: *How does a holistic education oriented all-ages school in Scotland carry out ESE?* and the coding was informed by theories in ESE, education *in*, *about*, and *for* the environment and sustainability e.g. citizenship, place-based learning, interdisciplinary learning, outdoor-learning, school-climate. However, the researcher remained open to a different story than anticipated e.g. the school didn't teach holistic ESE, and therefore the analysis combines elements of both inductive and deductive coding. Data were actively and repeatedly read, and initial coding and themes reviewed. Codes and themes are both semantic (descriptive) and latent (interpretive) (Braun & Clarke, 2006; Braun et al., 2014; Terry et al., 2017). As part of the theme development process following coding, a concept map was generated and refined to act as a tool to visually organise initial themes, sub-themes, and their links to each other (Simons, 2009).

The findings were then re-analysed from a CE perspective. The first stage of the analysis was based on the second research question: *What, if any, common ground (intersection) exists between the school's ESE approach and CE theory and practice?* The themes and sub-themes were positioned in relation to both ESE and CE theory and practice, and thus their point of intersection generated. This analysis was aided by the visual representation of the data in a Venn diagram. In the second stage, the points of intersection were brought into conversation with the CE literatures, and was guided by the final research question: *What can we learn about ESE-CE integration from these findings?*

This case study takes a broadly contextualist orientation to the data (Huxley et al., 2015; Terry et al., 2017), and interviewees' responses were viewed within the specific context of the school and educational setting, as well as the local and Scottish background (see above). The researcher particularly acknowledges as a non-Steiner-Waldorf educator, they will interpret data as an outsider[4].

Validity and ethical considerations

It is important to acknowledge that an instrumental case study risks being a 'make-your-case' study (Corcoran et al., 2004). While conducting the case study the researcher endeavoured to remain reflective and critically subjective and to be open and responsive to a different story than anticipated. During interviews no attempt was made to impose ideas or lead the interviewee. Thematic analysis of the findings was carried out first within the conceptual framework of ESE and Steiner-Waldorf education, and only afterwards re-analysed from a

CE perspective, to avoid imposing CE theory onto the initial findings. However, it should be acknowledged the researcher came to the study with grounding in both ESE and CE, and therefore the interpretation of the data will reflect that. Nevertheless, it is hoped the description given of the case will allow readers to make their own interpretations.

All interview data was triangulated with school and class observation data, field notes, and document analysis data to ensure it was supported by other sources of data. All sources of data were analysed together so that the findings are based on the convergence of information from the different sources (Yin, 2014).

The school and the participants have been kept anonymous by using only titles/roles i.e. the school, the principal, the vice-principal, and teacher. However, given the uniqueness, and therefore recognisability, of the school it was necessary to balance anonymity with providing sufficient data to adequately describe the case. The school and teachers were aware of the issue with anonymity.

Findings

The key findings show ESE at the school was carried out through a variety of avenues, such as holistic learning approaches (e.g. place-based, interdisciplinary, in-depth, and experiential learning), the school environment (e.g. role-modelling, school ethos and school organisation), the subject matter studied, an emphasis on fostering students' connectedness to nature, and developing students' social competence and responsibility. This section introduces the four themes and fourteen sub-themes that were generated through thematic analysis. The four themes are: The school as a sustainable organism; Holistic learning; Fostering a connectedness with nature; and Nurturing the whole person. Figure 1, the concept map developed during thematic analysis, visually depicts the themes and sub-themes, and their links to each other.[5]

Figure 1

How the school carries out sustainability education - themes and sub-themes
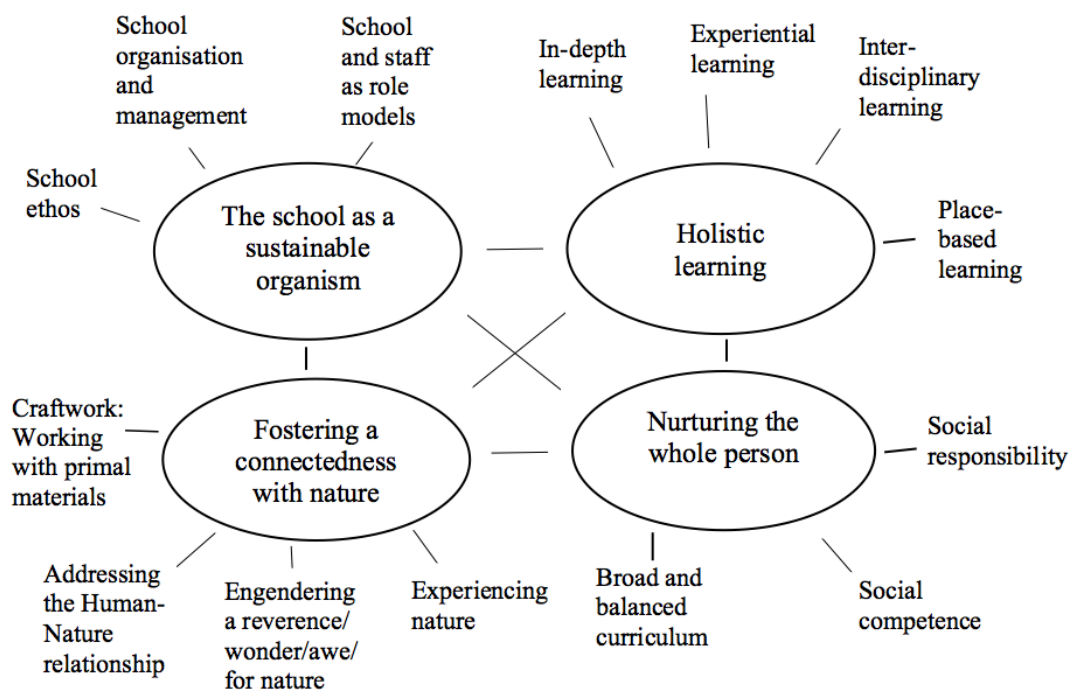
Theme 1: The school as a sustainable organism
Central to this theme is the belief that sustainability needs to be enacted throughout the whole school, not just in lessons or the curriculum, but through the ethos, organisation, and workings of the whole school. The theme has three sub-themes:

- School ethos: Aims of school and school atmosphere.
- School organisation and management: Non-hierarchical, cooperative organisation and management, and sustainability leadership.
- School and staff as role-models

The school ethos sub-theme was visible in the curriculum (School website, 2016; Avison & Rawson, 2014/2016) and throughout the school website e.g. the pages/documents on the school ethos, the calendar and Facebook page detailing seasonal, nature connected festivals; as well as being revealed within teacher interviews.

> How do we meet the emergent future? . . . The question comes towards us socially, economically, and ecologically. . . . We believe the answer lies in the right education of our young people. An education that is not driven by economic and political agendas to simply produce 'good workers' but to build up the whole potential of the human being; the mental, emotional, and practical aspects. . . . The work of the head, the heart and the hands must be constantly held in balance if we are to develop healthy and resilient adults capable of making wise choices for themselves and for the world. . . . If we wish to see resourceful, adaptable and resilient human beings capable of empathy and compassion for other human beings then our education system must address these areas. (*Ethos*, School website, 2016)

The school ethos is clearly in-line with a holistic-education/head-hands-heart approach, but there is also a strong ESE aspect e.g. in terms of addressing the social, economic and ecological aspects of the future, developing resilience, and capability to make wise choices for the world.

The school organisation is non-hierarchical and cooperative, in line with sustainability leadership (Ferdig, 2007; Visser & Courtice, 2011). Teachers described staff meetings where staff jointly read through the guiding curriculum text and discussed their teaching ideas (Avison & Rawson, 2014) (Teacher Interview 3 & 4) and the impression given of staff meetings was one of open and free discussion. It was observed both staff and students have informal, respectful relationships, with teachers addressed by their first names. The lower school (age 6–13 years) curriculum document (School website, 2016) specifically states students build a 'strong relationship of mutual understanding and respect' with teachers, and 'learning at [the] school is non-competitive'. This was supported by descriptions within several of the newspaper articles recounting school visits.

The Vice-principal talked about the need for the school itself to be a role-model for sustainability, and that ESE needs to exist not just within the curriculum, but also throughout the entire workings and organisation of the school:

> Modelling, it's something we talk about a lot within the management of the school, is modelling a way of being that is positive. . . and forward looking. . . . For me, that's what sustainability is about. It's not delivering a curriculum, it's about the whole organism being sustainable. . . . About role-models, you know, how could you argue that an education was sustainable, if it actually in it's very essence is not sustainable. .

. . So, you're teaching sustainability, but the actual system is not sustainable. Then it's not teaching sustainability is it? (Vice-principal)

Theme 2: Holistic learning
Central to the theme is sustainability learned through holistic learning. A UNESCO (2020) roadmap for ESD stated education needs to 'employ interactive, project-based, learner-centred pedagogy' (p. 8) and should 'engage the local community as a valuable setting for interdisciplinary, project-based learning and action for sustainability' (p. 28). As mentioned above, experiential, and real-world learning have been found to be effective approaches for values education in ESE (Lewis et al., 2008; Shephard, 2008; Tudball, 2010). Experiential-, place-based-, interdisciplinary, and in-depth learning are considered to fall under the term 'holistic learning' (Forbes, 1996) and have, therefore, been made sub-themes:

- Experiential learning: The process of learning through and reflecting on real-life experience.
- Place-based learning: e.g. community-based learning, service-learning, outdoor fieldwork (see Smith, 2017).
- Interdisciplinary learning: An approach that resists disciplinary boundaries and instead focuses on themes, issues or problems.
- In-depth learning: Interdisciplinary, project-based, student-led approaches that increases students' ownership of their learning and follows students' interest.

Experiential learning is emphasised in the school ethos, with the importance of learning 'rooted in the reality of the practical life' highlighted (*Ethos*, School website, 2016). The learning approaches observed weren't exclusively experiential, and traditional sit-down classroom lessons were observed (e.g. a math lesson in class 4/5, a nature studies/stories lesson in class 1/2/3), however, the school did intersperse experiential learning throughout each day. One example of ESE-linked experiential learning observed, was an upper-school class-trip to the local recycling centre. A lecture was held by the staff, but then the students walked around the facility, asked questions, discussed issues of non-recyclable waste and consumption, and then browsed in the second-hand/reuse-repurpose shop. The trip provided a memorable, real-life experience of the issue of recycling and included reflection on wider but connected issues such as consumption and local funds for such initiatives.

An important aspect of the school's upper-school curriculum is 'voluntary service', which 'extends the students' social and ecological awareness, and as an educational tool it is a good part of multi-dimensional, experiential learning' (*Curriculum: Upper School*, School website, 2016). The principal talked of the different volunteer activities students participate in e.g. beach cleans, helping maintain an edible woodland garden at a nearby eco-village, conservation work at the local nature reserve (Principal Interview). Developing 'a fine sense of social responsibility' is a central aspect of Steiner-Waldorf education (Avison & Rawson, 2014/2016, p. 83), and students are expected to 'increasingly take on social responsibility' within the school and wider community e.g. through helping the community with social and ecological projects (Avison & Rawson, 2014/2016, p. 339). The case study school places a particular emphasis on outdoor, nature-based voluntary service.

At the school, daily 'main lessons' throughout lower- and upper-school (6–19 years) are taught in thematic blocks e.g. Art history or Farming, lasting over several weeks, and involve multiple aspects of a topic being explored and discussed in an in-depth and interdisciplinary way. Students also choose 'individual projects' where they explore a topic of their choice in depth over several weeks (Observation, 5th October 2016). In-depth, interdisciplinary learning draws out the complexity of real-life, inevitably bringing in sustainability issues and connected values e.g. one upper-school teacher explained gender

equality issues are discussed as part of theatre studies through the historical role of women in theatre (Teacher Interview 2), another teacher (Teacher Interview 7) explained how a topic on architectural history involved visiting architectural sites and learning about the history of societies through experiencing and responding to (e.g. through drawing) the buildings and by learning how, why and in what context they were being built.

> It's about trying to join things up, trying not to work, you know, take subjects in isolation. . . . And that's, I would argue, that's part of sustainability isn't it? Because it's the joined-up-ness of the world, that helps us to be sustainable, really. (Teacher Interview 7)

Theme 3: Fostering a connectedness with nature

Central to the theme is education as a means of fostering a connectedness with nature; developing a reverence for nature that produces a lifelong concern for ecological sustainability issues. Sub-themes show how specific approaches contribute to nature connectedness. The theme has four sub-themes:

- Addressing the Human-Nature relationship.
- Craftwork/Craft-based learning.
- Experiencing nature.
- Engendering a reverence/wonder/awe for nature.

The school follows the basic Steiner-Waldorf curriculum that has two interacting strands—science and humanities—with a focus on the 'partnership' between humans and nature e.g. through agriculture and the use of materials (Avison & Rawson, 2014/2016). While talking about the two strands of the Steiner-Waldorf curriculum, the Vice principal explained the centrality of the relationship of man to nature and how that could foster sustainability thinking:

> So, I guess what you're doing by that—implicitly you're constantly questioning the relationship of man, as in human beings . . . and the environment, nature. . . . I would say that's the touchstone of the education, is the relationship of man to nature. . . . if that's what's happened to a child in their journey through Steiner education, then possibly, you would think by the time they leave, they would . . . be thinking sustainably . . . You know, because we're thinking about our affect on the world. (Vice-principal)

There is a strong emphasis on craftwork or craft-based learning at the school, more so than at other Steiner-Waldorf schools, and underlying this is the idea working with 'primal materials' such as wood and clay provides a grounding in the material world as a part of sustainability/environmental education (Teacher Interview 1). Teacher 1, who is the craftwork teacher, described a canoe-building project, which brought together craftwork, holistic learning, and ESE. While the students built canoes, the origin of the materials (e.g. repurposed liquor barrels from the USA) were discussed, alongside concepts such as buoyancy, and while craftwork and teamwork skills were developed. Later the canoe was used in a group expedition to a lake, forming part of a shared student experience in nature (Teacher Interview 1).

Outdoor activities, where students 'engage with the immediacy of the environment', are a central part of the school's curriculum (*Curriculum: Upper School*, School website,

2016). Outdoor learning occurs throughout the day and in different forms e.g. orienteering, school gardening, movement exercises outside, watching and reflecting on a sunset. The researcher accompanied upper-school students on an afternoon outdoor excursion focussed on learning navigation in a natural setting. At the start of term, the school has its annual 'Outdoor week', where students are exclusively engaged in school grounds projects e.g. building an amphitheatre or tree platforms for younger children to use to climb trees. Case study observations included a guided walk exploring and discussing the outdoor projects with the School Principal (Principal Interview), and again, later, with upper-school students who were writing reflections on the Outdoor week as part of their English class (Observations, Day 2). Reflecting on their time spent in nature is emphasised at the school (Newspaper article 1; Observation, Day 1)

The School principal talked about engendering a reverence to nature in the students, in an implicit, rather than explicit, way, and likened this to a pervading ecological language:

> It's implicit in everything we do from kindergarten. And this is really important to stress and emphasise, that if a child grows up in an environment where there's a kind of all pervading . . . implicit reverence for nature. . . . in kindergarten through stories of fairies and the gnomes and the elves. . . we give them these pictures of these [nature] forces but in kind of personalised terms, . . . so that they have this awe and wonder, which is really part of them, it's really part of them from the word go. They work with natural materials, work with sand, and water, and wood, and rock. . . . And so, that becomes part of their very being. . . . ecological and environmental teaching is like learning a language. If you learn it from very, very young it just becomes part of you. . . . we can do that in kindergarten, in a certain type of education, not through explicit[ly] saying "D'you know, you must never drop your litter". We would never say that in a Steiner school, ever, . . . it's not rule based, it's engendered in their very being through gardening, through walks through nature, and through stories. (Principal Interview).

Several other teachers similarly commented the school doesn't seek to address environmental concern or sustainability through rules, rather through the functioning and ethos of the school community, and through educating the whole person, allowing each student to explore the human-nature relationship and to learn by experiencing nature and the real-world in all its complexity (Teacher Interview 3, 4 & 5).

One Lower-school teacher emphasised the importance of younger students learning to positively connect with the world, and to experience positive feelings in nature (Teacher Interview 6). A high-school teacher said they consider students spending time outdoors as key to fostering respect for nature (Teacher Interview 3). Discussion of environmental/sustainability issues/problems for example isn't intentionally introduced until upper school (age 13). This is in line with the Steiner-Waldorf curriculum that states students of different ages require different approaches, e.g. with younger students the emphasis is on imitation, with middle-school students the emphasis is on feelings, and with upper-school students the emphasis is on fostering judgement and critical thinking (Avison & Rawson, 2014/2016; Hether, 2001).

Theme 4: Nurturing the whole person

Central to this theme is the need to educate the whole person. This theme captures a multifaceted approach evident in the data. It draws on the Steiner-Waldorf curriculum, but also the unique and broader approach of this particular school. There are clear parallels between the *Social competence* sub-theme and the importance of discussion and social or

participation skills and competencies discussed in the ESE literature (e.g. see Reickmann, 2018). This theme also relates to the aforementioned *head-hands-heart* approach in ESE, as well as the UNESCO (2019) call for the cognitive, behavioural and socio-emotional dimensions of ESE learning to be 'developed in conjunction' (p. 7), and the need to educate learners on a sense of belonging to a common humanity, shared values and responsibilities, empathy, solidarity and respect for differences and diversity, and a sense of responsibility for the future. The theme has three sub-themes:

- Broad and balanced curriculum: The importance of practical and emotional learning. Also, the idea that by nourishing the whole person through the arts, nature, etc. the root causes of unsustainability are addressed.
- Social competence: skills and values relating to meaningful engagement and interactions with others.
- Social responsibility: fostering responsibility as part of society and towards the environment, extending students' social and ecological awareness (*Curriculum: Upper School*, School website, 2016).

Social competence is part of the Steiner-Waldorf curriculum and considered part of students' moral development. In *The tasks and content of the Steiner-Waldorf curriculum* (Avison & Rawson, 2014/2016), used by the school as a curriculum guide/study, the authors state: 'social awareness needs to inform the school organisation in implicit and explicit ways' (p. 333), through the functioning of the school community e.g. management of conflicts, as well as through the curriculum: 'Children must experience an environment in which social competence is apparent in the relationships around them . . . The theme of social skills weaves throughout the curriculum and the teaching method' (Avison & Rawson, 2014/2016, pp. 333-334).

As discussed above under the *Holistic learning* theme, social responsibility is part of the Steiner-Waldorf approach and features in the curriculum guide followed by the school (Avison & Rawson, 2014/2016, p. 339): 'Students should increasingly take on social responsibility within the school community . . . helping with local community, with ecological projects . . . generating support for refuges, etc.'. 'Volunteer Service' is part of the school's curriculum (*Curriculum: Upper School*, School website, 2016) e.g. the students regularly participate in beach cleans, and maintain a local nature reserve (see more on this above under *Holistic learning*).

Summary of findings
Overall, the school can be seen to be working with ESE holistically, through the *head*: e.g. transdisciplinary learning and curriculum, critical thinking; *hands*: e.g. experiential learning, craft skills (boat building, gardening), volunteer service/conservation work; and *heart*: e.g. nature connection and reverence, social responsibility, place-based learning, school ethos (see Sipos et al., 2008).[6] However, several teachers stressed ESE permeates all teaching throughout the school (Teacher Interview 3, 4 & 5), and affective/value learning occurs across the themes. The *Holistic learning* and *The school as a sustainable organism* themes for example connect to the research by Shephard (2008) discussed above, which found activities using experiential learning and role-modelling were pivotal in affective/values learning. Experiential-, place-based-, interdisciplinary-, in-depth learning draws out the complexity of real-life, inevitably bringing in sustainability issues and their connected values, which connects to the research by Lewis (2008) on the importance of learning sustainability values in a real-word context (see also Sipos et al., 2008). The unique *heart* aspect seen at the school through the *Fostering a connectedness with nature* theme in

particular resonates with the aforementioned work of Sobel (1996, 2017) and Carson (1965/1998) on the importance of fostering love and/or wonder towards nature.

The school's environment and sustainability imbued ethos purposefully permeates the whole school ensuring the knowledge, skills and values bound together in student learning relate to the environment and sustainability. The values aspect of ESE is brought to the forefront of learning through an explicit emphasis on it in the school ethos, and notably through role-modelling, a focus on the human-nature relationship in the curriculum, and the prevalence of experiences in nature (including community-based volunteer service work) that seek to foster a connection to and reverence for nature.

CE Analysis

Having addressed the first of the research questions, the paper will now turn to the second and third research questions:

RQ2. What, if any, common ground (intersection) exists between the school's ESE approach and CE theory and practice?

RQ3. What can we learn about ESE and CE integration from these findings?

The first stage of analysis involved positioning the themes and sub-themes in relation to both ESE and CE theory and practice, and thus revealing any points of intersection. This analysis was aided by the visual representation of the data in a Venn diagram (Figure 2). In the second stage of analysis, the points of intersection were brought into conversation with the CE literatures, guided by research question three (RQ3). Berkowitz's (2011, 2017) reviews of empirical research on effective practices in CE was used as a base for aligning the case study findings with effective CE practices.

Figure 2

Venn diagram showing the intersection of Character Education (CE) and Environmental & Sustainability Education (ESE) theory and practice and the case study (sub)themes

Related CE theory and practice	Case study (sub)themes: Intersection of CE&ESE	Related ESE theory and practice
Ethical and empowering leadership	*School organisation and management*	Sustainability leadership
School-wide approach	The school as a sustainable organism	Whole school approach
School ethos	*School ethos*	School climate
Role-modelling	*School and staff as role models*	Whole school approach
Environmental Virtue Ethics (EVE)	*Engendering a reverence for nature*	(Reflective) Outdoor education, Forest schools, Environmental/sustainability values education
	Connectedness to nature	
Environmental Virtue Ethics (EVE)	*Addressing the Human nature relationship*	Philosophy relating to sustainability concept; Ecological worldview/thinking; Environmental ethics (biocentrism/deep ecology); Critical questioning of values/worldviews/paradigms
	Connectedness to nature	
Experiential-learning and real-life application emphasis, cross-curriculum approach	Holistic learning approach	Problem-based, interdisciplinary, real-life, experiential learning, case study learning.
Service-learning	*Social responsibility*	Place-based 'community' learning, Ecological place-based education, Action competence
Discussion, moral dilemmas, Civic, performance & participatory virtues	*Social competence*	Competencies/capabilities approaches Discussion and debate of sustainability issues

The Venn diagram (Figure 2) depicts the intersection of CE and ESE *as seen at the school*. The overlapping region shows the themes and sub-themes developed through the case study thematic analysis and their relation to CE and ESE theory/practice in the left-hand and right-hand circles respectively, showing how the school integrates elements from both fields.

Overall, Figure 2 shows how the theme-related CE methods are predominantly indirect or implicit. Many of the themes and sub-themes link to implicit moral education through the school community, and 'the development of character through all the agencies, instrumentalities and materials of school life' (1909/1975, p. 4) as advocated by Dewey, who considered indirect CE far more influential than direct moral instruction. In particular, the sub-themes of *School ethos* and *School and staff as role models* intersect with indirect CE's emphasis on school culture, ethos, and role-modelling (Arthur et al. 2017, Berkowitz, 2011). This was supported by several members of staff during interviews (Teacher Interview 3 & 4), who implied an implicit/indirect approach and vocally opposed an explicit/direct approach to teaching values. This was also seen in the interview with the school principal quoted above under *Theme 3: Fostering a connectedness with nature*.

It is beyond the scope of this paper to go into detail on each of the points of intersection depicted in Figure 2, however, below, the (sub)themes will be briefly examined in terms of their alignment with the evidence-based CE practices reviewed by Berkowitz (2011, 2017). The analysis is organised around Berkowitz's (2019) PRIMED model of effective CE (Prioritisation, Relationships, Intrinsic motivation, Modelling, Empowerment and Developmental perspective).

Prioritisation, Relationships, Modelling, and Empowerment
Reviewing empirical research evidence on CE practices, Berkowitz (2011, 2017) found prioritising CE, a school-wide focus, and role-modelling were all effective CE practices. Berkowitz (2017, p. 86) states that CE cannot 'merely be an add-on or a "silo-ed" part of the school', instead it needs to be 'a core aspect of the school's authentic mission and vision' (Berkowitz, 2011, p. 156) and CE 'must permeate the school community and all of its

stakeholders' (Berkowitz, 2017, p. 88, see also Arthur et al, 2017; Lapsley & Narvaez, 2007). This aligns with *The School as a sustainable organism* theme and the school's approach of sustainability enacted throughout the whole school, not just in lessons or the curriculum, but through the ethos, organisation, and workings of the whole school.

As mentioned above, Shephard (2008) stressed the essential function of role-models in teaching affective outcomes in relation to sustainability, and role-modelling is considered a fundamental method in character education (Arthur et al., 2017; Berkowitz, 2011, 2017; Berkowitz et al., 2008). Crucially, role-modelling is facilitated through the school's whole-school approach, where individual actions fit into an overall stance in terms of sustainability. Actions aren't directed by explicit rules, instead they are guided by the ethos and approach of the school. The interview and observation data suggest the school itself, the school community and staff collectively within that environment model sustainability more so than individual teachers, e.g. emphasis on and use of nature-rich school grounds; material choice and use; the whole school participating in outdoor week where the school outdoor areas are enhanced; the celebration of 'nature festivals' by the school community (School website, 2016; School Facebook site, 2016); as well as the observed non-hierarchical structure of staff relationships (see under Theme 1 above). In relation to the latter, Berkowitz (2011, 2017) found the development of positive, nurturing, and non-hierarchical/empowering relationships between staff and students, and having a climate where learners are encouraged to have autonomy are effective CE practices.

Intrinsic Motivation
Berkowitz (2011, 2017) found fostering 'intrinsic motivation' to be a proven, effective means of CE.

> Ultimately, the goal of character education is to shape the nature of the child; that is, to help the child become more moral and effective at navigating the world in ways that add to the world . . . What we do not want is people who do the right thing only when others are watching or when there is a payoff for doing so. (Berkowitz, 2017, p. 89)

This aspect of CE can be seen in the emphasis on service-learning at the school (*Social responsibility* sub-theme and *Holistic learning* theme) and through the *Fostering a connectedness with nature* theme.

Service-learning. Berkowitz (2011, 2017) found service-learning a strategy to internalise values and develop intrinsic motivation. Lapsley & Narvaez (2007) state service learning provides students with opportunities for moral action, providing a meaningful way for students to engage in character development while contributing to society. In relation to ESE, Shephard (2008) states service learning is often employed as a means to achieve affective learning outcomes across subjects, employing reflective experiential learning to engage learners with community-based issues and needs (see also Lewis et al., 2008; Lovat & Clement, 2016, Tudball, 2010).

Within the school's curriculum guide there is an emphasis on developing 'a fine sense of social responsibility' fostered though practical training and work experiences (Avison & Rawson, 2014/2016, p. 83). There is considerable overlap between service-learning as part of the *Social-responsibility* sub-theme and the *Holistic learning* theme, since service-learning is experiential, place-based, and involves interdisciplinary learning.

Notably, the school differs from many other CE service-learning programmes, which aim to foster civic engagement and citizenship (Arthur et al., 2017), by placing emphasis on outdoor, nature-based service learning e.g. conservation work at the local nature reserve, assisting at a nearby edible orchard/woodland garden, and voluntary beech cleans (Principal

Interview). This places the fostering of civic engagement within the context of the environment, and can be seen as fostering environmental citizenship or stewardship (see Sandler, 2006; Smith, 2017; Treanor, 2010, 2014).

Fostering a connectedness with nature theme. The implicit, non-rule based approach to ESE taken at the school aligns with Berkowitz's (2011, 2017) intrinsic motivation guiding principle of CE: 'Ecological and environmental teaching is like learning a language. . . . it's not rule based, it's engendered in their very being through gardening, through walks through nature, and through stories (School Principal interview).

Hursthouse's (2007) discussion of 'being rightly oriented to nature', and in particular her argument for the need for such an orientation to be understood as a virtue, a trait of character, which cannot be adopted merely through a rational process, parallels the theme *Fostering a connectedness with nature*, and the sub-theme *Engendering a reverence for nature* in particular (see also Sandler, 2006[7]). Hursthouse (2007) contends by teaching children to understand, appreciate, care for, and feel wonder for nature, a particular mindset relating to the natural world is shaped. This resonates with the School Principal explaining reverence for nature is 'engendered in their [the students'] very being' and becomes 'really part of them . . . part of their very being' (Principal Interview) and was echoed by another teacher stating students consider themselves 'part of nature' (Teacher Interview 5). The Principal also mentioned teaching nature stories containing personifications of nature, fairies and gnomes, as part of the lower-school curriculum, which he described as fostering students' 'awe and wonder' for nature (Principal Interview). Caring for nature can be seen throughout the school levels: Kindergarten classes have 'Garden Fridays', where students spend the whole day outside in the school edible garden (Observations, Day 1); lower-school students have a weekly outdoor session e.g. learning to compost (Teacher Interview 6); whereas high-school students maintain the nearby eco-village orchard (Principal Interview), as well as maintain the school grounds as part of outdoor week e.g. weeding, planting trees, clearing paths (Observations, Day 1 & 2).

Based on empirical psychological research, Kals & Müller (2014) stressed the importance of an affective connection to nature in terms of forming moral motivation needed when faced with socio-ecological dilemmas that require perceived self-sacrifice for the common good. They found positive nature experiences were key for developing feelings of empathy toward and identification with nature (Kals & Müller, 2014).

ESE-CE integration

ESE-CE intersection in this case study is part of a holistic, interdisciplinary, whole-school educational approach. Integrated ESE-CE weaves throughout the holistic learning approaches, the curriculum, and ethos. The ESE-CE provision is predominantly implicit, but it is also intentional, being aligned with the school ethos that is both imbued with sustainability but also a *head-hands-heart* educational approach. The school can be seen to practice typical implicit evidence-supported CE methods in relation to ESE, for example role-modelling, school ethos, a school-wide focus, and service learning (Berkowitz, 2011, 2017). Notably, *Engendering a reverence for nature* represents an example of environmental virtue ethics in practice (Hursthouse, 2007; Jordan & Kristjánsson, 2017; Sandler 2006), while linking to the often called-for mindset approach within ESE (Bonnett, 2002; Sterling, 2001), showing where ESE and CE intersect in both practice and theory. While some of the above approaches are advocated within ESE, they are more central to and prevalent within CE.

By showing how the school integrates ESE with evidence-based CE practices, this case study offers a practical illustration of how educators in other settings can address the values education aspect of ESE using empirically evidenced approaches (Berkowtiz, 2011, 2017). The CE field can benefit from the case study by noting how typical CE approaches are

altered by an environmental and sustainability emphasis, thereby expanding the remit of CE in line with the sustainability challenges we face today. The case study also shows how the two fields, ESE and CE educators, have the potential to collaborate, share practice, and become more integrated. As such, these findings reveal potential avenues for future interdisciplinary practice and research in the fields of ESE and CE.

However, the potential for ESE-CE integration suggested in these case study findings offers only one avenue to address the values education aspect of ESE. Each school or educational programme will need to assess their own unique circumstances and needs in terms of appropriateness and feasibility of an ESE-CE approach. In a review of CE, Lapsley & Narvaez (2007, p. 38) state that 'goodness-of-fit' is crucial for a successful and maintainable program, as well as 'flexible implementation in the spirit of continuous improvement'.

The question of transferability raises important questions about the larger-scale, instrumental exam-driven education prevalent across the UK. As explained above, the school is small-scale, independent, and works outside the general school system. This results in the school receiving no state funding and it therefore relies upon fees subsidised through private/individual/community sponsorship. While this research has focussed on the idea of working with existing practices common to ESE and CE, it might prove challenging to adopt the educational approaches at the case study school within a typical westernised education system. Curren & Metzger (2019, p. 3) argue that most education requires a 'profound reorientation' to adequately address sustainability. However, aside from a complete overhaul of the education system, there is still knowledge to be gained from aspects of the school's approach that can be used to inform ESE-CE integration, as discussed above, and it is hoped that the findings in this case study provide guidance to those who wish to pursue ESE-CE collaboration, shared practice, and integration.

Additionally, the research in no way evaluates the effectiveness of the school's approach in terms of resulting sustainability values, attitudes or behaviours (other than those existing behaviours under-taken as part of the school programme e.g. service-learning). However, the practices examined at the school were analysed in terms of evidence-based CE practices and are therefore supported by empirical research on how education in character/values impacts on a variety of behaviours (See Berkowitz 2011, 2017, Berkowitz et al., 2008), which are also reinforced by the psychological research findings linking values and sustainability behaviours mentioned previously. By linking the school's ESE practices to empirically supported CE methods/approaches, the study shows how evidence-based CE practices might be integrated with ESE. Future research might be a longitudinal study exploring the value-, attitude-, and behavioural effects of an integrated ESE-CE approach.

Looking forward
The exploratory nature of this study positions it as a basis for future research exploring other examples of how the values education aspect of ESE is being addressed. In addition to the longitudinal research suggested, action research bringing together ESE and CE practitioners would provide valuable insight into how ESE-CE integration might function in practice, including an exploration of facilitators and barriers to integration e.g. exam-driven education (Jordan, 2021). Exploring the impact of ESE-CE integration on teacher education and professional development would be another worthwhile avenue for research.

Notes

¹ A note on terminology: While the term used in this paper is environmental and sustainability education (ESE), anyone familiar with the field of education in relation to/about/for the environment/sustainability/sustainable development will be aware of the semantic morass that exists. The author takes the stance that this paper is relevant to all educational attempts to foster a more environmentally and socially sustainable world. Here ESE is understood as education that aims to develop learners' knowledge, skills, attitudes, and values with the intention to enable a worldwide transition towards sustainability, and includes education *in*, *about*, and *for* the environment and sustainability. However, it should be noted throughout the paper when referring to other research that uses a different term to ESE e.g. ESD, the original term is kept whenever practical.

² Stern et al.'s (2000) ABC model of behaviour in relation to environmentalism, depicts behaviour (B) as an interactive product of personal-sphere attitudinal variables (norms, beliefs and values) (A) and contextual factors (C). When contextual factors are neutral the association between attitude and behaviour is strongest, for behaviours that are more difficult, time-consuming or expensive, the less attitudinal factors seem to influence them. What can be taken from the current understanding is that all else being equal, the extent that an individual holds pro-environmental values will determine how pro-environmental that individual will act.

³ For an overview of virtue ethics see Hursthouse (1999, 2012).

⁴ The researcher/author is neither a Steiner educator nor were they Steiner educated themselves. A Steiner school was chosen because it was a critical case, providing an instrumental example of where ESE and CE were perceived to come together based on initial scoping via document analysis.

⁵ When viewing the findings, it should be noted themes and sub-themes are separated in order to tease out the different aspects of ESE taking place. In reality, the different aspects are interconnected (signified by the connecting lines in the concept map) and are part of an integrated, holistic, head-hands-heart approach at the school.

⁶ Sipos et al. (2008) developed a transformative sustainability learning framework based on action research at the University of British Columbia, that stressed a *head-hands-heart* approach to learning balancing cognitive, psychomotor, and affective (values-based) learning. They gave the example of planting a garden and preparing food for a community gathering as a means to address all three learning domains.

⁷ The school's 'Reverence for nature' can be interpreted as a blend of Sandler's (2006) Virtues of Communion with Nature (including wonder, love) and Virtues of Respect for Nature (including reverence and compassion).

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Figures

Figure 1: How the school carries out sustainability education - themes and sub-themes.

Figure 2: Venn diagram showing the intersection of Character Education (CE) and Environmental & Sustainability Education (ESE) theory and practice and the case study (sub)themes.