A FORMATIVE EVALUATION OF THE THEORY, PROCESS, AND OUTCOMES OF THE EARTHCHILD PROJECT

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COMPULSORY DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature:_____

Date:_____

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ABSTRACT

A formative, theory-based evaluation of the Earthchild Project was conducted to explicate and assess the programme's theory, processes, and proposed outcomes. The evaluation did not attempt to establish accountability for the programme but focused on revealing information that could assist in its development and improvement. The programme's implicit theory was articulated using information gained through programme documentation and interviews and a focus group conducted with programme stakeholders. The logic and plausibility of the resulting theory was assessed and compared to social scientific literature to reveal programme weaknesses and areas of possible improvement. Although the programme was not based on researched theories, the evaluation suggested that much of the programme theory is sound. The process evaluation examined the fidelity and extent of the programme's implementation, whether the programme was adequately reaching its target population, and operational issues and support functions. Programme documentation and the interviews and focus group with stakeholders as well as semi-structured observations were used to assess the operation of the organisation and its services. Practical issues were highlighted, such as the organisation's lack of formal structure and the relatively frequent and haphazard changes that are introduced in the services they provide. The outcome evaluation gave brief and limited insight into whether the programme recipients benefitted in the intended areas. The evaluation examined three of the programme's main outcome orientations: (1) Environmental attitudes and conservation behaviours; (2) Health behaviours; and (3) Wellness. A post-test only with non-equivalent groups design was used for the evaluation of the learner outcomes. A Likert-type questionnaire was administered to 165 primary-school learners, the programme's main target population, who participated in the programme once a week, once a month, once a term, once a year, or never. The results suggested that learners who participated in the programme more regularly, scored higher on the questionnaire for the environmental attitudes and conservation behaviours and the health behaviours sections, as well as overall on the outcome scales. Open-ended questionnaires were administered to eight teachers who participate in the programme. The results indicated that teachers are benefitting primarily in the areas of health and wellness. The many design limitations for the outcome section meant that the results are tentative indications and do not establish accountability for the programme.

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

This study aims to assess the theory, process, and outcomes of a school-based intervention that offers activities focused on improving health and wellness as well as environmental conservation behaviours among primary school learners. In chapter two, the key stakeholders' implicit theoretical assumptions about how the intervention is expected to function and benefit the target population are made explicit and assessed. In chapter three, the actual process of the programme's implementation is examined. In chapter four, an assessment of the programme's outcomes is presented. The remainder of this chapter provides an introduction to programme evaluation, specifically theory-driven evaluation, which is employed in this research, as well as a brief description of the programme being evaluated.

Programme Evaluation

Programme evaluation refers to the use of social research methods to determine the effectiveness of social interventions (Rossi, Lipsey, & Freeman, 2004). Social programmes are developed with the intention to improve specific social problems or conditions; they are "organised efforts to enhance human well-being" (Chen, 2005, p. 3). Although programmes share many features, they also differ significantly, which necessitates a tailored approach to evaluation. Programme evaluations need to be appropriately adapted according to the unique internal and external conditions of the relevant programme in order to assess the pertinent aspects of that particular programme and effectively determine how it contributes to society (Rossi et al.). The three main purposes for evaluating a programme are: (1) for making appropriate programme improvements; (2) for deciding if it is worthwhile to continue the programme; and (3) for determining accountability (Zomorrodian & Matei, 2010).

Formative and Summative Evaluation

Two basic programme evaluation paradigms are *formative* and *summative,* utilization of which depends on a programme's specific stage of development as well as the underlying intention of the evaluation (Chen, 2005). Formative evaluation is primarily concerned with understanding and assessing a programme in order to develop and improve its theoretical foundations and implementation processes for it to be more effective. Summative evaluation, which is appropriate for more mature interventions, focuses on evaluating outcomes and impacts; its main purpose is to assess the overall merit and relative worth of the programme (Zomorrodian & Matei, 2010). Although this evaluation looks briefly at short-term outcomes for the intervention, it is primary formative in nature and aims to provide substantiated insights for possible improvements. Three ways in which a formative evaluation can assist in improving a programme are (Rogers, 2000): (1) by revealing inconsistencies or gaps in the underlying theory; (2) by establishing an explicit model that can help staff understand the bigger picture of what they are doing in order to focus on the most important components; and lastly (3) by providing validated feedback and recommendations.

Theory-Driven Evaluation

A *theory-driven* approach to evaluation has gained considerable popularity and is endorsed by many evaluation authors, including Chen (1990, 2003, 2005), Donaldson and Gooler (2003), Donaldson and Lipsey (2006), Pawson and Tilley (1997), Rogers (2000), Rossi et al. (2004), and Weiss (2004). It provides the evaluator with a rich picture of the programme's implicit and explicit assumptions to ensure the evaluation is appropriately designed and the results fully understood within the context of the particular programme (Chen, 1990).

The definition of theory-driven evaluation that is used to guide this thesis is "any evaluation strategy or approach that explicitly integrates and uses stakeholder, social science, some combination of, or other types of theories in conceptualizing, designing, conducting, interpreting, and applying an evaluation." (Coryn, Noakes, Westine, & Schroter, 2010, p. 201). The main aim of this approach is for the evaluator, with assistance from key programme stakeholders, to develop a coherent outline of how the programme can be logically linked to its intended outcomes (Donaldson & Gooler, 2003). Elicited programme theories attempt to define the assumed mechanisms of change; they are structured to create an explanation of how the programme activities are expected to produce the appropriate outcomes within the specific context in which it exists (Pawson & Tilley, 1997). This process allows for clarification of and reflection on the programme's conceptualization, providing an opportunity to detect possible weaknesses in its theoretical foundation prior to further evaluation (Rogers, 2000).

There has been some debate regarding the exact meaning of the term *theory*, which in this context could relate to social scientific findings or merely to a proposed chain of events that are assumed to lead to the desired outcomes (Weiss, 2005). Rossi et al. (2004) propose three main components of programme theory, which will form the foundation of the theory evaluation: (1) the organisational plan; (2) the service utilization plan; and (3) the impact theory.

The potential benefits of developing programme theory prior to evaluation are numerous; many of these benefits have been implied above but in order to further justify the use of theory-driven evaluation, a more comprehensive list is presented:

- It can provide an opportunity to meaningfully engage stakeholders in the evaluation (Funnell & Rogers, 2011).
- It can encourage a common understanding of the programme's purpose and the process of functioning necessary to fulfil this purpose among the various stakeholders (Rogers, Petrosino, Huebner, & Hacsi, 2000).
- It can reveal faulty assumptions that stakeholders might have based the programme on (Rogers et al., 2000).
- It can provide the researcher with deeper understanding of the context, purpose, and reasons for the programme's existence (Weiss, 2005).

- It can help develop an evaluation that is more responsive to the particular programme and its stakeholders by identifying the pertinent performance dimensions and outcome variables to be focused on (Donaldson & Lipsey, 2006).

- Seeing the logical steps that were followed by the programme, can add a more substantiated assumption of causality to the outcome evaluation (Weiss, 2005; Rogers et al., 2000).

- It can suggest potential improvements to immediately address weaknesses in implementation (Rogers et al., 2000).

Programme Description

The Earthchild Project is a non-profit organisation that offers a wellness and environmental education, school-based intervention programme for teachers and learners. They work mainly in two disadvantaged primary schools in the Western Cape, South Africa; one in Khayelitsha and another in Retreat. The activities are mostly run out of school time but they have recently introduced an in-class time intervention, the Living Classroom initiative. This is a minimal intervention conducted at the two main schools as well as in nine other primary schools in the same areas. This section provides a basic description of the programme to orientate the reader; a more detailed and critically analysed description follows in the theory evaluation. The information was primarily elicited from programme material; including the website (www.earthchildproject.org), newsletters, media articles, and administrative documents regarding the programme. This was supplemented with information from the stakeholder interviews and interactions with the staff, as well as field work observations to compile this brief description.

Background

The Earthchild Project began in 2006 as an intervention with the intention of enriching learners' educational experiences through alternative, experiential learning activities, such as yoga and gardening. The programme founder indicates that activities are aimed primarily at improving learners' "holistic wellness" and "environmental conservation behaviours". Programme stakeholders believe that through the activities offered, learners can interact in a meaningful and engaging way within their ecological and social environment. The founder explained that the initial inspiration for the programme came to her from reading a book about "a school in India where the children had yoga everyday and they used to have classes outside under the trees and they were very involved in maintaining the campus. They also used to do regular subjects like Maths and Science but it sounded very holistic" (J. Kretzmar, personal communication, August 2011). The main idea behind the programme is to implement and sustain extra-curricular, experiential learning activities relating to environmental education and personal health and wellbeing in primary schools. Full-time, paid facilitators manage and run the intervention at the schools, drawing support from volunteers and relevant partner organisations.

Activities

The Earthchild Project activities include:

- Gardening club: Learners are taught how to start, maintain, and harvest from an organic vegetable garden.
- Earthworm farming: An ecological concept using organic waste to be decomposed into compost by earthworms. The learners are taught to create and manage worm farms.
- Hiking club: One Saturday per month the hiking club learners are taken on a hike, giving them the opportunity to get out of the townships and engage with nature.
- Holiday programmes: In July and September the Earthchild Project organises a five day holiday programme for learners. Activities include yoga, arts and crafts, sports, dance, and gardening.
- Yoga: A traditional Eastern practice of specific physical exercises and breathing and meditation techniques believed to promote physical, mental, and spiritual wellness.
- Tai Chi: A martial art that entails slow, precise movements and requires sustained concentration (Wall, 2005). This club is offered exclusively to boy-learners at the school in Khayelitsha and is facilitated by a male volunteer.
- Arts and crafts: This club encourages learners to be creative with recycled material.
- Teacher retreats: The retreats introduce teachers to activities, such as yoga and meditation, healthy eating and cooking demonstrations, educational nature walks, and massage treatments, to help them manage stress. It also promotes self-development and effective communication approaches that will give teachers the practical skills and knowledge to cope better in stressful working environments.
- Young women's club: Once a month a group of young women from Grades 8, 9, and 10 from the school in Khayelitsha meet to discuss pertinent issues about being female and to do activities related to self-development.
- Living Classrooms: An in-class time intervention to initiate and maintain classroom worm-farms and container gardens as a practical way of teaching life sciences, and introducing the learners to waste management and healthy living. Meditation and yoga practices to promote health and wellness are included in the programme. Facilitators initiate the activities and the class teachers are expected to maintain the programme with their learners.
- Healthy tuck shop: The Earthchild Project encourages healthy eating at the school in Retreat by ensuring nutritional options – such as fruit, popcorn and nuts – are available for the learners to buy at school. A small group of girls from the school run this initiative as an entrepreneurial venture and are taught basic nutrition and healthy eating behaviours

Literature Review

A brief review of the literature pertaining to the evaluation of similar types of programmes is introduced here to contextualise the evaluation that follows. A more comprehensive appraisal of the relevant literature will, however, be integrated into the outcomes section of the theory evaluation (Chapter 2). Key aspects of the programme activities and its proposed outcome orientations highlight two main programme categories under which it falls: (1) school-based health and wellness and (2) ecological education. It also incorporates aspects of experiential learning, holistic education, and out-of-school time programmes.

School-Based Health and Wellness Programmes

Schools play a significant role in teaching and promoting healthy living. There has been a shift from the traditional notion of health education in schools to a more inclusive and comprehensive wellness orientation (Mũkoma & Flisher, 2004). The concept of wellness encompasses the way an individual engages with the world physically, emotionally, psychologically, and spiritually with consideration of any conditions that affect their ability to live an optimum, well-balanced life (Villalba, 2007). Wellness programmes targeted at learners have begun to incorporate the philosophy of positive psychology into their interventions and move away from the disease model that focuses exclusively on eliminating illness (McLoughlin & Kubick, 2004). Programmes are beginning to adopt an integrated approach that looks at physical, mental, and emotional health and teaches practical skills and competencies as well as attempting to transform learners' attitudes and values in order to encourage healthier lifestyle choices. A review of such programmes indicates that a holistic wellness approach has the potential to reduce multiple problematic behaviours as well as enhance positive achievement in learners (Flay, 2002).

Ecological Education Programmes

The UN declared the years between 2005 and 2014 as the "Decade of Education for Sustainable Development" (Tilbury & Ross, 2006, p. 14) and stipulated that this was one of the "world's greatest priorities" (Tilbury & Ross, p.14). An increasing number of interventions are being implemented in schools world-wide in an attempt to influence learners' attitudes and behaviours concerning ecological issues and the natural environment (Morgensen & Mayer, 2006). In a comprehensive review of over 100 studies on school-based environmental education, Rickinson (2001) noted that certain conditions and characteristics tend to make interventions more likely to positively impact learners' environmental knowledge, attitudes, and behaviour. These include more long-term residential field courses, outings to nature-rich places, school-based interventions that involve parents and the community on some level, and theoretical information that focuses on real-life environmental situations.

According to Morgensen and Mayer (2005) environmental education needs to go beyond basic knowledge dissemination and isolated activities and actively and holistically integrate the concepts into learners' values and everyday lives. Tilbury and Ross (2006) similarly proposed that there needs to be a shift from the simple knowledge-based approach to environmental education to a more integrated approach of Education for Sustainable Development (ESD). They defined sustainable development as "striving for ecological sustainability as well as an

improving quality of life for the present and future generations and it has notions of social justice, healthy economies thriving societies. [*sic*]" (p. 15) and proposed that interventions should focus on teaching learners the skills and thinking capacity to actively engage with environmental issues.

An evaluation of a sustainability programme implemented in six schools in Victoria, Australia, found that ESD was a comprehensive and effective strategy for mobilizing change (Gough, 2005). The programme attempted to actively engage the entire school in order to mobilize environmental change and sought to transform learners' knowledge, attitudes, and values as well as teach them practical skills on environmental conservation. Bonnett (2002) argued that sustainable development should be thought of more as a frame of mind than a formal policy. In terms of educating learners, this means that sustainable development should not be confined to curriculum learning but, more importantly, should be promoted through the ethos of the school and positive interactions with nature. In another article (Bonnett, 2007), he further contended that environmental education should aim to inspire learners to develop an appreciation for nature in order to alter their underlying attitudes through pragmatic engagement with and experiential learning in nature.

Morgensen and Mayer (2005) suggested a critical framework for environmental education that can be used as a guide for the evaluation of interventions. The underlying philosophy of the framework presents environmental education as a mechanism for developing a future generation that actively seeks and implements solutions to problems being faced. They proposed that interventions should focus on developing learners' action competence rather than merely attempting to modify their behaviours; this is thought to support a "critical, reflective and participatory approach" (p. 14) to the way learners engage with the environment. They contended that environmental education programmes should encourage learners to think critically about the relevant situations, to identify problems as well as possible solutions and motivate them to take the necessary action; in other words, they suggested that programmes need to inspire active advocacy for environmental issues among learners rather than simply changed behaviours.

Fien, Scott, and Tilbury (2001, p. 379) noted "the lack of a widespread culture of evaluation in environmental education". They pointed out that although there are many well intended and innovative interventions, the majority lack the credibility that systematic evaluation provides. One of the practical challenges that they identified is that because environmental education is primarily concerned with the long-term vision of wide-spread social change and improvement of environmental conditions, programme impacts are particularly difficult to measure. For this reasons most evaluations focus on measuring participants' knowledge, attitudes, and behaviours. The nature of environmental education, however, is inherently complex and evaluators need to be cautious of generalisation and oversimplification, which obstruct true representation of the programme and its outcomes (Morgensen & Mayer, 2005).

Experiential Learning

It is widely recognized that education should be more than the traditional teacher to learner exchange that occurs in the classroom; non-formal, experiential education that occurs outside the classroom forms an important part of children's holistic development for a "successful orientation towards life" (Festeu & Humberstone, 2006, p. 1). Experiential education is a philosophy according to which changes or growth in understanding are believed to occur

as a result of real-life experiences; learning conditions are structured to facilitate a process of active learner engagement through action, reflection, abstraction, and application (Itin, 1999). It can be defined, more succinctly, as "education (the leading of students through a process of learning) that makes conscious application of the students' experiences by integrating them into the curriculum" (Carver, 1996, p. 9).

Festeu and Humberstone's (2006) research on non-formal, experiential education emphasized the importance of evaluating individual programmes due to the broad variety of interventions that now fall under this educational paradigm. They argued that although basic characteristics of "good practice" can be suggested, the success of the intervention ultimately depends on the unique context and circumstances of the programme's internal functioning and external services. Carver (1996) proposed a framework for experiential learning to be used as a tool for programme development and evaluation. The framework specifies three pivotal areas to be considered: the programme characteristics, characteristics of the setting in which learning takes place, and significant learner experiences. Programme characteristics include the pedagogical principles of active learning, authenticity of activities, drawing on the learners' experiences, and connecting the learning experience to future utilization with the added aim of positive socialization of the learner. Setting characteristics include the resources and facilitators' behaviours and language used to cultivate the appropriate environment. Outcomes related to learner experiences include developing personal agency, a sense of belonging as well as competencies in a variety of learning areas.

Holistic Education

Carver (1996, p. 9) described experiential education as a holistic approach "in the sense that it addresses students in their entirety – as thinking, physical, emotional, spiritual and social beings." *Holistic* is a generic term that is often used in a rather vague way. According to Forbes (2003), holistic education aspires to develop learners to their fullest possible potential by addressing all aspects of their being, including relationships to themselves, others, and their environment.

The outcomes-based, curriculum learning of the traditional South African school system is structured according to content knowledge and focuses predominantly on learner performance (Taylor, 2007). A traditional, prescriptive education approach, such as this, has limitations for learning and can contribute to learner apathy as well as social, behavioural, and affective problems in the classroom, lower academic performance and achievement, and failure to produce competent, socially responsible adults and citizens (Larimer, 2008). A new movement of research focuses on the educational and developmental benefits of addressing the whole person in learning; holistically nurturing the physical, mental, spiritual, and emotional growth of learners is shown to improve learning, performance and behaviour and is proposed to create greater social change in the long-term (*see* Arguelles, McCraty, & Rees, 2003; Brown, 2004; Larimer, 2008).

Out-of-School Time Programmes

The term *out-of-school time* indicates any time spent by learners outside of the school day. This is a period that presents both risks, due to unproductive or self-destructive behaviour, as well as opportunities, for academic

enrichment and skill development (Halpern, 2002). Out-of-school time programmes cover a large variety of interventions that are intended to structure this time and protect children; they range from supervised after-care to extra-mural sports and activities to holiday programmes (Beckett et al., 2009). They can also be thought of as what Festeu and Humberstone (2006) referred to as "non-formal education programmes". They described such programmes as supporting a voluntary, practice-based approach to learning, "which emphasises intrinsic motivation, the usefulness of knowledge and critical thinking (rather than objective knowledge and memorizing) and aims at identity growth, social change and integration into society" (p. 12).

Since the nature and intentions of out-of-school time programmes vary significantly, it is important to investigate and evaluate each programme within its unique context to understand possible benefits for participants and determine particular improvements for the intervention (Geiger & Britsch, 2003). Evaluation findings do suggest a number of positive outcomes associated with non-formal education programmes for disadvantaged youths; these include improved self-concept, better social adjustment and relationship management, as well as increased academic behaviours and achievement (Festeu & Humberstone, 2006). Halpern (2002) stressed the importance of well-structured, after-school programmes especially for children from low-income households, whose guardians frequently lack the time, resources, and competence to facilitate the constructive and productive use of this time. He suggested that out-of-school time interventions potentially provide: "supervision and protection; an opportunity to test interests, nurture talents, and express oneself through arts and sports; and exposure to both one's own and the larger culture….an extra measure of adult attention and care….an alternative setting in which to observe different standards of behaviour, try on different selves without risk of ridicule, and experience success." (p. 203).

There seems to be increasing emphasis placed on the academic outcomes of out-of-school time programmes by funders and evaluations. Research suggests, however, that the question of whether programmes should include an explicit academic component designed to improve learner results remains debatable (Granger, 2008). Most programmes do encourage learning but are more concerned with trying to foster a sense of interest and enjoyment in the learning experience than enforcing a specific academic component that simulates the school curriculum (Halpern, 2002). As Granger (p. 3) asked, "Will such an expectation crowd out other important goals and turn after-school programs into an unappealing version of the school day?" Either way, he demonstrated that programmes intentionally aiming to improve academic achievement do have the potential to positively influence such outcomes.

Reason for Evaluation

Conducting an evaluation of a social intervention has two main–and somewhat incompatible–purposes: (1) as research for furthering social scientific theories and (2) as a practical tool for improving a specific intervention (Rossi et al., 2004). There has been debate among evaluators as to where exactly the emphasis should be placed. Rossi et al. proposed that evaluators should ultimately aspire to negotiate between these two intentions and strike an appropriate balance to create value in both arenas. Patton (1997) believed that evaluation should be utilization-focused and action-orientated, all the while emphasizing a social scientific, data-based approach to assessment and analysis. Although the evaluation of the Earthchild Project is formative and focuses primarily on providing practical information to substantiate improvements to the intervention, social scientific techniques and procedures are

adopted to create conclusions that could be applied to other similar programmes. As a result of the formative orientation, this evaluation places emphasis on the theory (Chapter 2) and process evaluations (Chapter 3); the outcomes evaluation (Chapter 4) does not attempt to create accountability for the intervention but merely gives a brief indication of the effectiveness of the programme's performance. As a relatively young and small organization with a vision for possible growth in reach and impact, a formative evaluation is valuable in advising substantiated changes and improvements that will ensure the intervention is optimally effective and beneficial to recipients (Rossi et al.). Each subsequent chapter presents the methods and findings of the three levels of the evaluation.

CHAPTER TWO: PROGRAMME THEORY EVALUATION

Interventions are based on implicit or explicit assumptions and beliefs held by relevant programme stakeholders who are responsible for its implementation and management; frequently, however, these underlying beliefs are incoherent and divergent. In a theory evaluation, the evaluator works closely with the stakeholders in an attempt to extract these beliefs and formulate a logical and sound theory, detailing how and why the programme does what it does. This facilitates a greater understanding of the programme's purpose and functioning and could inform further planning and programme improvements (Chen, 2003). While some social interventions are based on well-defined scientific theories, many are based on stakeholders' experiences of the social problem and personal preferences regarding the possible solution (Chen, 2005). This is the case with the Earthchild Project; the researcher, therefore, has assisted in constructing a coherent and articulated theory about how the programme is presumed to function and assesses its soundness and plausibility.

A systematic review of a programme's theory is particularly useful when evaluating a complex intervention, such as the Earthchild Project, where a combination of techniques and approaches are used to address a broad social situation. As a programme that is not based on social scientific knowledge or reasoning, clarifying and assessing the assumptions documented in programme records and articles as well as those held by major stakeholders regarding the various parts and functions of the programme is an important foundation for the evaluation (Rossi et al., 2004). A theory-driven evaluation clearly and comprehensively articulates the programme's underlying assumptions and lends explanatory power to the interpretation of the outcomes data, while also contributing to the general body of social science knowledge (Donaldson & Lipsey, 2006).

There are three main programme components that are fundamental to theory evaluation: (1) the organizational plan; (2) the service utilization plan; and (3) the outcomes theory (Rossi et al., 2004). The organizational plan explains how the programme's internal operations are supposed to lead to the actualization of the service while the service utilization plan describes and explains the process, step-by-step, of how the target population is expected to become involved with the programme (Rossi et al.). Findings established in these two areas offer a framework for the process evaluation to establish the integrity of the programme implementation (Chen, 2003). The outcomes theory illustrates assumptions about how stakeholders believe their service activities translate into the intended social benefits and evaluates the validity of these assumptions (Rossi et al.). The outcomes established through the theory evaluation as the main focus of the programme could become an appropriate focus for the outcomes evaluation (Geiger & Britsch, 2003).

The theory evaluation section of this study focuses on two overarching evaluation questions regarding the programme theory:

1) How are the programme activities logically linked to the desired outcomes?
2) Is the programme logic coherent and plausible?

The evaluation aimed to extract and articulate the Earthchild Project's assumptions about its internal organization, service utilization, and expected outcomes to determine its coherence and plausibility. The first question was addressed by eliciting the stakeholders' implicit mental models about the programme; engaging with the programme stakeholders exposes the theoretical intentions of how the programme is meant to run and what it is supposed to do (Funnell & Rogers, 2011). Additionally, the researcher used formal and informal programme documentation–including programme guidelines, reports, website information, and newsletters–to deductively develop the espoused theory (Funnel & Rogers). The second question looks at the plausibility and coherence of the programme theory that has been clarified in question one. The researcher determined if the theory is consistent with the existing social scientific literature on the programme activities and related outcomes.

Methods

Procedure, Instruments, and Participants

The first step in eliciting the programme theory was to study the formal and informal documentation that exists on the organization, including the project website (www.earthchildproject.org), newsletters, media articles, and documents regarding programme objectives. The researcher employed a deductive approach using the available information to get a basic understanding of how the programme operates and what it aims to be doing, which led to the first rough draft of the programme's logic model. This first stage is useful to clarify a programme's articulated theory, which can then form the base of further investigation and evaluation. (Funnell & Rogers, 2011).

Structured interviews were conducted with five of the donor representatives, all four of the permanent staff members, and the principals of the two main schools in which the programme runs to elicit their understandings and beliefs about the Earthchild Project. Names and contact details for the donor representatives and staff members were given to the researcher by the programme director. Convenience sampling was employed for the donor representatives since the researcher could only engage individuals for whom the programme director gave contact details. All the staff member details were given. The above-mentioned individuals were contacted via email to request an interview; all of them responded positively and interviews were arranged. The researcher met with the principals of the two main schools in order to inform them about the evaluation and request an interview; they consented. All participants signed a formal consent form after being fully informed about the nature of the research and their role in it. The interview schedules for these three groups were devised by the researcher (see Appendices A, B, & C).

A focus group with the permanent staff was conducted to review the researcher's preliminary understandings and gain further insight into the programme theory to assess the internal coherence of the programme's basic assumptions. Well conducted focus groups encourage active participation and involvement from participants to share their opinions in an interactive and empowering way (Kevern & Webb, 2001). It is a valuable qualitative technique to get comprehensive knowledge in an evaluation (Rossi et al., 2004). The session was guided by a set of questions related to aspects of the programme's organizational plan, service utilisation, and impact

theory (see Appendix D). The interviews and focus group were recorded via an audio-tape recorder and transcribed by the researcher for further analysis.

Data Analysis

A coherent theory was constructed by the researcher using the transcribed data and the logic and plausibility of the programme were determined through a critical review of the elicited theory. Relevant issues and questions pertaining to the logic and plausibility of a programme's theory are stipulated in Rossi et al. (2004, p. 157) as a guideline to address the clarity and feasibility of goals, objectives and intended effects, procedures, functions and services as well as the target audience. These points were used to guide the researcher's assessment.

A literature search of research and evaluations done on programmes and interventions with similar activities and outcomes was conducted; the researcher used this as a source of comparative assessment for the programme theory. Social science theories that provide verifiable evidence about behaviour related to interventions that are similar to the programme being evaluated can be helpful in assessing the likely effectiveness of the underlying theoretical assumptions (Donaldson & Lipsey, 2006). Rossi et al. (2004) recommended that an external reviewer, not involved with the programme or evaluation, also critically evaluates the theory. The research supervisor acted as the external reviewer, offering advice on the logic and plausibility of the programme's theory.

Logic Models

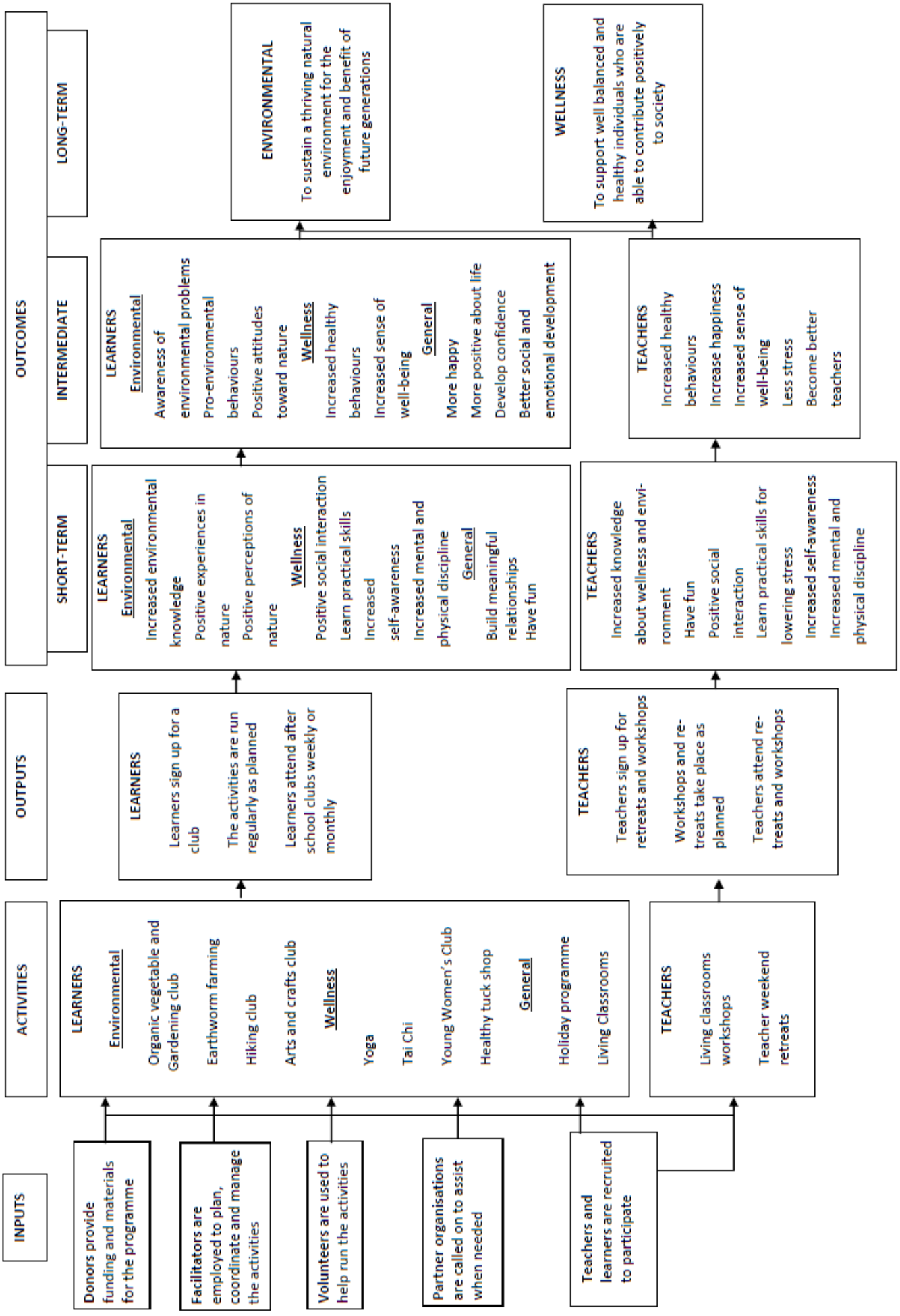
Programme theory is commonly summarized diagrammatically; depicting the programme using a visual aid is useful in order to understand and assess how it is expected to function (Rossi et al., 2004). A logic model is one such diagrammatic aid, representing the proposed relationships between programme inputs, internal functioning, activities and services, and outcomes (Chen, 2005). It presents an overall explanatory picture of how the organization is supposed to work; outcomes are linked to the activities or organisational processes to make explicit assumptions about how the intervention is expected to benefit the target population (Rogers, 2000). It is also a useful guide to ensure the information produced through the evaluation is relevant to the programme goals (Geiger & Britsch, 2003). This was one of the first steps carried out in the present evaluation. A simplified version of the programme theory for the Earthchild Project is presented using a logic model, after which each component is more thoroughly explored and evaluated. The service utilisation plan, the organisational plan, and the outcomes related to each of the programme activities are also represented using logic models.

Findings

The Earthchild Project Logic Model

The Earthchild Project logic model (Figure 1) represents an overview of the programme's inputs, activities, outputs, and outcomes.

Figure 1. Overall Logic Model for the Earthchild Project



According to the programme logic model (Figure 1), *inputs* refer to any resources–human, financial, material– which the programme uses to facilitate the delivery of their services (W. K. Kellogg Foundation, 2004). The relevant inputs, including resources, funding and the programme stakeholders, will be further explored later in this section. The actual services, depicted in Figure 1 as *activities,* are the actions implemented by the intervention to bring about the intended changes (W. K. Kellogg Foundation). These were described in the introduction (Chapter 1). The *outputs* and *outcomes* depict the desired consequences that the programme expects to bring about as a result of their activities (W. K. Kellogg Foundation). *Outputs* are the direct results produced by the programme in terms of how the target population engages with the services activities. This aspect of the programme is expanded upon in the service utilization plan that follows. The *outcomes* refer to specific changes in programme participants' knowledge, attitudes and behaviour that the programme expects to attain; *short-term outcomes* depict outcomes they expect to achieve quite soon after recipients' participation in the programme while *intermediate outcomes* are expected to take longer to occur. The *long-term outcomes* reflect the ultimate impact the programme looks to inspire (W. K. Kellogg Foundation). An extensive account of the outcomes theory pertaining to each of the programme activities is presented later in this chapter.

Location and Setting

The Earthchild Project works in the Cape Town area of the Western Cape, South Africa. It is based in a relatively small office in Cape Town central, where most of the administrative work is done. The activity facilitators are based at the schools where they carry out most of their work. They are very involved with the school and the learners and spend most of their time at the school, setting up the activities and interacting with the children. Schools are the logical place to base a programme targeted at learners since they have easy access to this location.

Inputs: Resources and Funding

Resources. The Earthchild Project depends mostly on the skills of the staff and volunteers who run the program activities and is, otherwise, not very material intensive. The activities are mostly based at and run on the school premises; the school classrooms are used for the Living Classrooms initiative and most of the clubs–for example, yoga, arts and crafts clubs–while the vegetable garden and worm-farming is done outdoors in the gardens established by the Earthchild Project, which occupy a corner of the school grounds. The worm-farming and garden clubs do require some basic materials, such as containers, earthworms, compost, and seedlings. Most of these materials are donated on an informal basis. The programme has a limited capacity with regards to funds and staffing and works on a relatively small scale, in terms of the activities provided and the population that they serve. Their biggest expenses are staff salaries and the learner outings, which have transport, food, and venue-hiring costs.

Funding and sponsorship. The Earthchild Project has a diverse number of corporate and non-corporate donors who support the initiative. Their initial donor was Earthchild Clothing–also their namesake–who continues to support the project in a variety of ways, including funding, advising, and management and accounting assistance. They are also the main beneficiary of Earthdance, an international music festival organisation; besides funding, they

occasionally assist in marketing and promoting the project. The organisation has a close and rather informal relationship with these funders. The representatives from these two organisations described how they feel the values–of health and wellness and environmental education–espoused by the Earthchild Project are well aligned to their brands and the message they try to convey to the public, which attracts their support. Airports Company South Africa (ACSA) is a more formal corporate benefactor; they have a three to five year agreement to donate funds annually and require two annual reports from the programme.

Inputs: Stakeholders

Directors, staff, and volunteers. There are four permanent staff members, including the programme director, who are full-time and paid employees. The project also has around 16 committed volunteers who help with the gardening, worm farming, arts and crafts, hiking, Tai Chi, and yoga clubs at the schools as well as the holiday programmes. There is a small board of directors, consisting of three members who are responsible for giving input into major decisions and providing general assistance and support where needed.

Partnering organisations. The Earthchild Project has collaborated with a number of organisations that provide additional support for the programme. They recognize four main partners; Mamelani, Karma Shala Yoga Studio, Eco-Schools, and Urban Harvest (www.earthchildproject.org). In the interviews, stakeholders indicate that they have worked most closely with Mamelani, which is an NGO that focuses on health education and youth development. Mamelani have organised that a full-time social worker and youth counsellor be placed at the two main schools and also provide a wide range of assistance to teachers, learners and parents. In the past they have also worked closely with the Wessa/WWF Eco-Schools initiative, which recognises and supports schools that are committed to environmental learning and action. Urban Harvest, a landscaping company, assists in designing and maintaining the vegetable gardens at the two main schools.

Target Population

The target populations for this intervention are teachers and primary school learners. The extra-mural activities are voluntary and learners sign up in the beginning of the year to join. The in-class activities are requested or consented to by the class teachers and learners are subsequently obliged to participate in these activities. The teacher workshops and retreats are open to all teachers in and around the Cape Town area. These aspects of the programme will be looked at in more detail in the service utilisation plan and the process evaluation (Chapter 3).

The intervention is aimed at primary school learners because they are thought to be at an influential stage of their development. The programme focuses exclusively on primary schools based on the staff members' beliefs that it is more beneficial to influence the lifestyles and habits of younger learners. Although not derived from scientific reasoning, this assumption is consistent with the literature (Durlak, Weissberg, Dymnacki, Taylor, & Schellinger, 2011; Taylor, van der Berg, Reddy, & Janse van Rensburg, 2011) that emphasises the critical benefits of aiming cognitive, social, and emotional growth interventions at learners in the early stages of development. The after-

school club activities, such as gardening, worm-farming, arts and crafts, and yoga, as well as the Living Classroom initiative are offered to learners between grades one and seven.

All of the schools currently engaged in the programme are in disadvantaged communities (Khayelitsha and Retreat) where schools and parents cannot afford to offer these types of extra-mural activities to their children and teachers do not have opportunities to attend workshops on self-development and interpersonal skills development. Festeu and Humberstone (2006) emphasised the importance of non-formal and outdoor education–where experiential learning activities take place outside of the traditional school structure–for disadvantaged youths. Socioeconomic status is an influential variable acting on health behaviour; poorer communities and families generally have insufficient resources to provide the optimal health and wellness promoting environments for their children (Prilleltensky & Nelson, 2000).

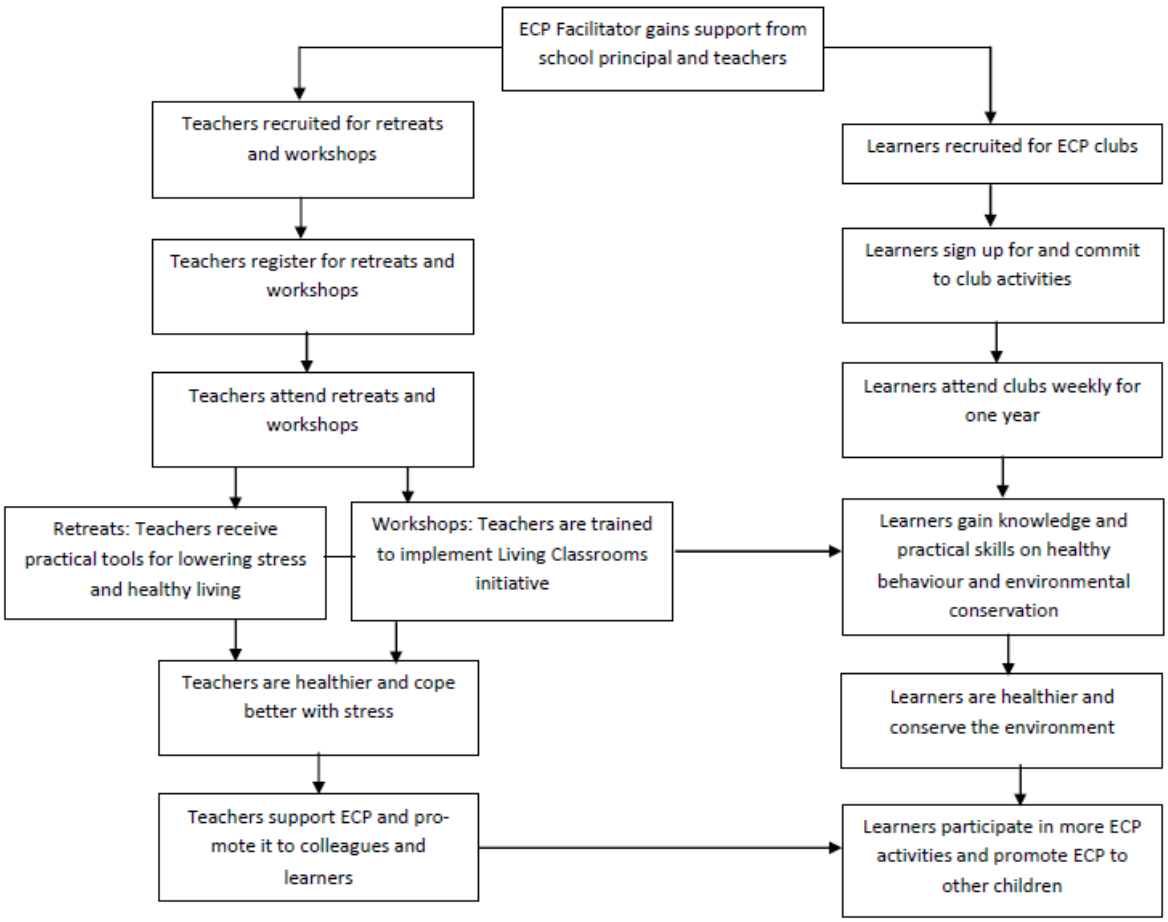
According to the programme founder, however, the intervention was not designed exclusively for underprivileged communities. The programme is ultimately intended for schools of diverse ethnic and socioeconomic statuses in the belief that all learners and teachers could benefit from the skills and knowledge of healthy living and environmental education.

The teacher retreats and workshops are targeted at the teachers from any schools in the Khayelitsha and Retreat areas. In interviews with the programme stakeholders, all of them stated that the learners were the target population but none of them immediately affirmed the teachers as another target population for the intervention. This demonstrates that the learners are the primary focus of the intervention and teachers are seen more as tool to assist in implementing the concept and promoting it among learners. Most of the staff members expressed that by engaging the teachers in the programme, they hope that the knowledge and skills will be filtered down to further impact the learners.

Service Utilisation Plan

A service utilisation plan describes how the target population is expected to receive the proposed intervention (Donaldson & Lipsey, 2006). The Earthchild Project does not have an official, documented service utilisation plan that they adhere to; like most of the more administrative functions of the organization, they work primarily on an ad hoc basis. This could be problematic in terms of strategically ensuring the intervention reaches the appropriate people in the intended dose; an issue that will be further looked at in the process evaluation (Chapter 3). The flowchart diagram (Figure 2) summarises the basic process of how the programme expects to engage and recruit the target populations to participate in the programme.

Figure 2. Service Utilisation Flowchart for the Earthchild Project



In the initial stage of the programme's implementation at the schools, a staff member approached the principals of potential schools, explained the concept and hoped to gain their permission for the initiative to be run at their school. Once the programme had the principal's consent and support to be based at their school, the facilitators were able to recruit teachers and learners for the activities. In the beginning they did presentations to the teachers to explain the concept but subsequently, as the facilitators have become more embedded in the schools they work in and have formed relationships with the teachers and learners, there is a less formal recruitment and communication system, predominantly through word-of-mouth. Currently, facilitators inform the teachers about the programme activities, hoping to gain their assistance by promoting the programme to the learners and agreeing to run Living Classroom activities during school time. The teachers are expected to help promote and support the learner interventions; this will be further discussed in the process evaluation (Chapter 3).

For the teacher retreats, interested teachers register and pay a fee of R150, to ensure their commitment to attend. A total of about 20 teachers are confirmed to attend each of the eight retreats per year. On the workshops and at the retreats, they are taught practical skills to live healthier lifestyles and cope with personal and occupational stress. On the workshops, they are also trained to implement the Living Classrooms programme in their classes. The

programme staff and donors expect that some of the knowledge and skills gained through these teacher interventions will feed down to the learners.

The facilitators tell the learners about the clubs and activities on offer and encourage them to sign up. The learners voluntarily commit to attend the club/s weekly or monthly for a whole year. The learners are expected to participate regularly in the activities for which they sign up. Although the facilitators follow up with absent learners, there is no process forcing the learners to attend once they have signed up; they do so out of their own volition and are free to drop out of the programme. They are taught practical skills, knowledge, and insight and are encouraged to integrate what they have learnt into other areas of their lives. The programme stakeholders hope that in this way, healthy habits and lifestyles will be established by the learners to promote their personal wellbeing (see outcomes theory).

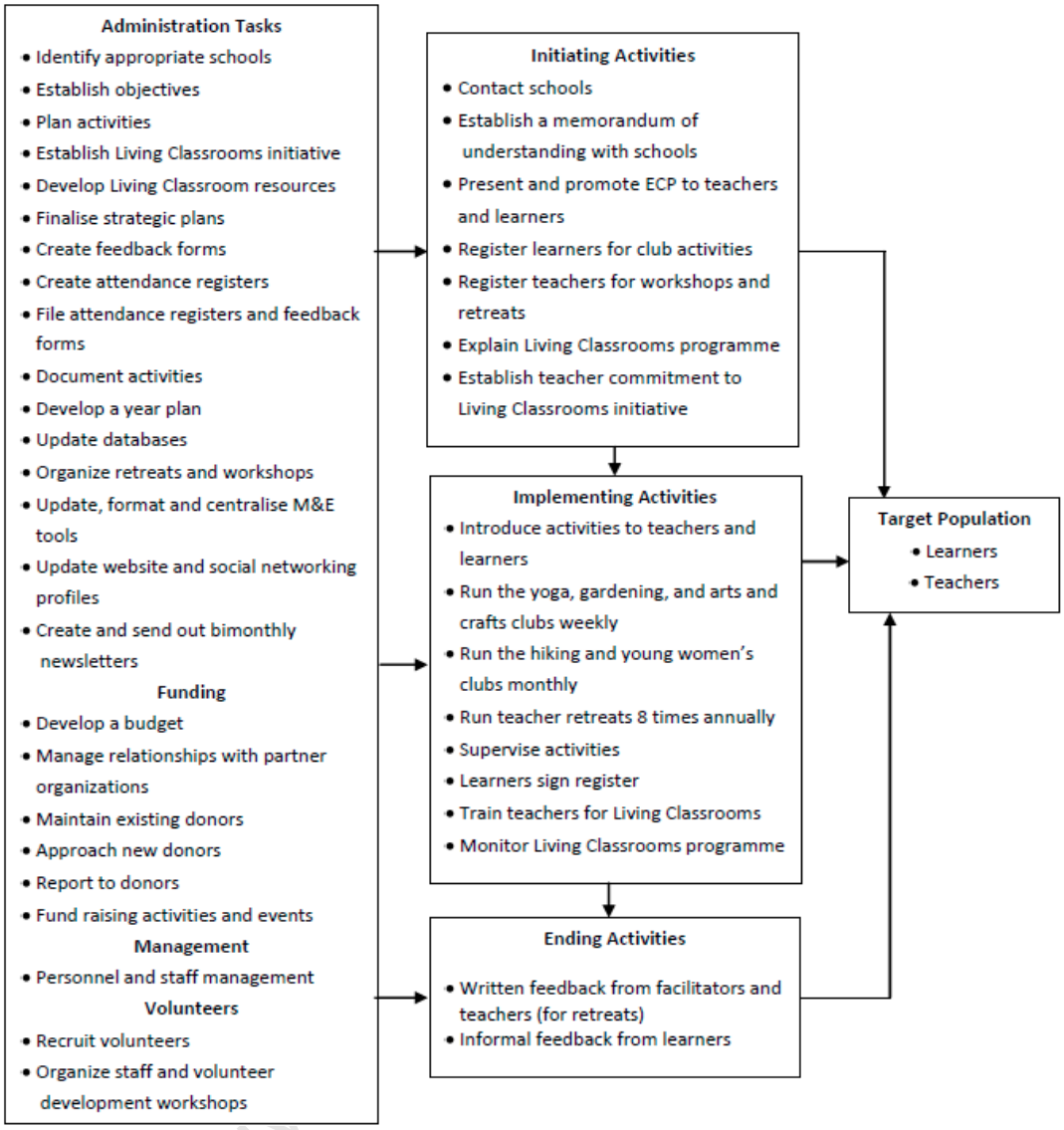
Organisational Plan

The organisational schematic (Figure 3) lists the organisational functions and illustrates the basic structure necessary to support the appropriate delivery of services to the target population. Administrative tasks, funding, management, and volunteers are general organisational function areas that form the foundation to the programme's functioning. There are also organisational activities relating to developing, initiating, implementing, and ending the activities. The main functions are explained below.

Administration. An external consultant has helped the programme to develop basic organisational processes and procedures such as strategic planning, creating databases, and performing basic monitoring procedures, in terms of attendance registers, feedback forms, and some focus group data collection, which is used in the biannual reports to their primary donors. Two of the corporate donors have also actively assisted and encouraged the programme with the administrative side of the organisation.

Administrative tasks are an important foundation for the intervention activities. The facilitator in charge of the specific activity has to plan the activities and establish or revise activity models, especially for new projects, such as the Living Classrooms initiative; the planned activities are supposed to be documented and filed. A year plan is devised by the team at the beginning of each year to indicate when the activities will happen so that the appropriate arrangements can be made in a timely manner. Creating basic paperwork, such as the attendance registers and feedback forms, completing these, and filing the completed versions is necessary for keeping a record of programme information. Each staff member is responsible for ensuring the admin for their activities is up to date. The programme director, with help from the facilitators, is also responsible for most of the public relations work, including writing and emailing the bimonthly newsletter and regularly updating the website and their social network pages (Facebook and Twitter).

Figure 3. Organisational Schematic for the Earthchild Project



Management. Many NGOs, which espouse altruistic values and ideals of equality, are reportedly uncomfortable with the traditional top-down management approach associated with capitalist values (Lewis, 2007). Crutchfield and McLeod Grant (2008) found, however, that some degree of management is necessary to run an efficient and effective NGO. The Earthchild Project currently has an unstructured approach to management, where each staff member is responsible for developing and managing their role within the programme with little external accountability.

Volunteers. The programme is run by a small team so volunteers are valuable in assisting to run the activities with the learners. The programme director explained that having lots of volunteers was not an outright intention for the programme but that people have wanted to get more practically involved. She recognised that a more formal structure was needed to manage volunteers and so one of the staff members is specifically responsible for recruiting, training, supporting, and generally managing the volunteers. The programme director claimed that

they try to offer eight workshops per year, for instance in facilitation skills, to staff and volunteers to develop their skills.

Organisational objectives. The staff members, with the assistance of an external programme development consultancy, have developed activity objectives related to programme processes. These are well articulated and electronically documented. They specify key outputs for the programme, the date by which they should ideally be achieved, and the person/s primarily responsible for its achievement. Seven main objectives were identified and broken down into critical components. The main objectives for 2011, as stated in this document, are as follows:

1) To establish two model schools as training and resource centres by implementing holistic and experiential learning programmes for adults and children.

2) To expand their programmes to other schools in the two focus communities, Khayelitsha and Retreat.

3) To offer retreats that focus on self-development, stress management, healthy living, and developing skills for an Earthchild approach to education to individuals working with children (for example, teachers and youth facilitators).

4) To maintain and expand relationships with volunteers and partners to effectively support the programme.

5) To have adequate skills, resources and admin, management and communication support to implement projects effectively and professionally.

6) To effectively market the programme to the public.

7) To be financially sustainable through diverse channels of income.

Organisational Plan for Activities

Developing the activities. The programme evolves according to contextual and environmental factors; the activities offered and what is done in these activities are not fixed but flexible to change as the facilitator deems it necessary or appropriate. The staff members are given a lot of agency in terms of initiating and conducting activities. There is no formal process of assessing their ideas; if a staff member or a volunteer has an idea to incorporate a certain activity into the programme, then they present the idea to the rest of the staff members who decide collectively whether to include it or not. Almost no formal research is done about the activities or how to conduct them but they are developed mostly according to the staff members' or volunteers' own experiences and judgements. They experiment a lot and are encouraged to try new activities or adapt established activities.

Initiating the activities. Before the activities begin, facilitators meet with the school principals and establish or re-establish cooperative relations. A memorandum of understanding is set up with participating schools to ensure everyone is in agreement about roles and responsibilities. The activities that are proposed to occur during school time or prospective outings are slotted into the timetable by the teacher who organises the school calendar. For the

in-class activities, however, the facilitator generally just informally confers with the teacher concerned to arrange an appropriate time for activities to run. The programme staff will sometimes give a presentation to the teachers about the project and activities offered and tell the learners about the various clubs that they can join. The learners and teachers sign up voluntarily for the clubs, workshops, or retreats that they wish to attend. The Earthchild Project has been working for four to five years in the two main schools. The facilitators claimed that most of the teachers and learners at these schools are familiar with the programme and know the facilitators; getting their support and commitment for the activities is, thus, a rather informal process.

Implementing and ending activities. The clubs commence at the beginning of every school year; facilitators and volunteers introduce the learners to the club activities, and subsequently teach and supervised them in the relevant areas. Attendance records are supposed to be kept for the duration of the clubs and written feedback from facilitators is supposed given after each activity. The extra-mural clubs for which the learners sign up, such as the garden and worm-farming clubs, are run after school while other activities are arranged to run in class time with all the learners, such as the Living Classrooms initiative and the yoga. The teacher retreats are run eight times a year, while workshops are held on a regular basis to train teachers in the Living Classroom initiative. Written feedback is supposed to be collected for all events and activities.

Needs and Needs Assessment

Social programmes arise as a response to social problems or needs, which have been identified within a certain target population. A programme's services and activities should be suitably designed and developed according to these identified needs (Rossi et al., 2004). No formal needs assessment and minimal formal research was done in the case of the Earthchild Project, however. The founder devised the programme based on her volunteering experiences at schools in Cape Town, South Africa, which gave her a practical, but informal, idea of the needs of the target population. The needs that caught her attention were those related to her personal interests, namely environmental education and health and wellness. She confessed that building up the intervention has "been quite an organic process but the implementation of it in many ways has confirmed that these kinds of interventions are necessary and important." This statement indicates that needs of the target population were not systematically explored prior to the establishment of the intervention.

The Earthchild Project was inspired by what the programme founder described as the distressing state of the modern world and the disconnection between the natural environment and humanity. Many of the other programme stakeholders also talked about universal needs that underlie the philosophy and principles of the programme. They indicated that they believe there is a widespread need for people to reconnect with themselves and the earth, which is the primary focus of the project. This is a very broad and vague need for a programme to be founded on and the scale of the activities and potential impact of the programme cannot be practically aligned to the extent of this type of underlying need. Steering away from these rather lofty and unrealistic ideals, the researcher was able to elicit some more practical needs that the stakeholders have identified within the learner target population. A wide variety were listed, including the need: for improved nutrition; to interact with nature; to

receive positive reinforcement; to enhance their self-esteem; to improve their English; to feel a sense of belonging; to learn how to respect other people and their surroundings; to learn morals and values.

After some discussion in the staff focus group about the target population and their needs, the director admitted that the programme does not address the most obvious needs of their target population but offers an alternative way of living and being in the world that looks to improve the quality of people's lives and create a sustainable future. She explained that she often feels like the intervention caters to needs that the target population, on some level, do not know they have. There are fundamental things that the children of this community need, such as food, learning to read and write, clothes and shelter, that the project does not address; the programme founder suggested that the programme addresses "unconscious needs or needs people aren't aware of".

A simplified version of the needs being addressed by the programme for the evaluation, as well as for the programme's own accountability, has to be deciphered to clarify its goals and overall purpose. This will also help the programme stakeholders to understand whether what the programme is doing in the schools and communities is actually making a necessary difference.

Problems being addressed. The Earthchild Project espouses a positive philosophy of prevention. They believe that by promoting wholesome and well-balanced lifestyles, they avert a variety of problems–ranging from those related to personal health to broader environmental issues–that the programme recipients could encounter. The project founder considered there to be a lack of opportunity for learners, particularly in underprivileged communities, to develop life skills that support holistic wellbeing and environmental conservation. This forms an important underlying motivation for the project.

Although problems related to the environment and health and wellness are focus areas for the programme, there are other noteworthy problems that the programme claims to address. The programme website cites social problems, such as gangsterism, substance abuse, and unemployment, as particularly prevalent in the communities in which they work. The intervention looks to indirectly influence such problems, albeit on a relatively small scale, by exposing learners to holistic living and encouraging them to get involved with healthful activities in order to develop healthy habits. One of the facilitators explained that because of the difficult circumstances in which the majority of the target population grow up, many of the learners lack basic morals and values, like respect for others. The Earthchild Project attempts to teach them such morals and values through the activities and interactions. Two of the other facilitators, who themselves come from these communities, recognised that many of the children they work with lack hope and dreams for the future; the facilitators believe that they encourage and inspire the learners to want to achieve more in their lives.

A study conducted to assess risk behaviours of primary school learners in disadvantaged areas of Pretoria, South Africa, confirmed the above mentioned problems (Visser, 2003). Findings indicated that a relatively high number of learners were already engaging in risky behaviour, such as substance abuse and sexual activity. These

findings emphasise the need for well-planned prevention interventions that target this vulnerable population. It was interesting to note some of the reasons given by learners for engaging in risky behaviours, which included "to forget their problems, a sense of destruction, for enjoyment, and to improve their self-esteem" (Visser, 2003, p. 63). The author suggested that programmes adopt a positive approach that looks to empower learners, helping them constructively deal with personal problems, improve their self-esteem, and enhance their overall well-being.

Outcomes Theory

Outcomes theory details the assumptions about how the services offered by the programme are expected to improve conditions for its recipients (Rossi et al., 2004). As has been indicated, the theory and rationale behind the development and inclusion of the programme activities into the Earthchild Project are not based on social science but are developed through staff members' experiences and lay knowledge. In this section, the researcher presents the programmes' outcomes logic, as it was elicited from stakeholders, and juxtaposes it against social scientific logic to determine the reasonableness of the assumptions. The findings indicate that many times the programme logic is, in fact, albeit unintentionally, consistent with social scientific findings. The goals and objectives relating to the programme's outcomes will first be looked at to give an indication of the ideal desired outcomes.

Goals and objectives. Eliciting goals and objectives that relate to how the programme intends to impact programme recipients is an integral part of understanding a programme's theory (Rossi et al., 2004). They "reflect the desire to fulfil unmet needs" (Chen, 2005, p. 20) and their ultimate realization justify the programme's very existence. Goals for the programme participants are expressed in the project's mission to provide teachers and learners with practical skills for living holistic and well-balanced lifestyles and to develop their awareness of self, personal health, and the environment. The Earthchild Project website (www.earthchildproject.org) claims, "We focus on the holistic development of children, teachers, schools and communities. Our aim is to create meaningful and sustainable change by providing practical skills in how to live a more balanced and fulfilling life." This goal is rather vague and unfocused. Through the interviews, however, the stakeholders were able to give a better idea of what they believed this entails. To be meaningful for the theory evaluation, the programme goals need to reflect a concrete and specific situation that can realistically be attained through their current activities (Rossi et al.).

The intervention activities are predominantly concerned with promoting healthy living, through better nutrition and increased exercise, as well as promoting environmental conservation, through experiences in and knowledge of nature. More than this, however, the Earthchild Project aims to give the learners a positive outlook on life; all five of the donor representatives mentioned this as a key benefit they believed that the programme is giving to learners. The facilitators indicated that they want to give the learners hopes and dreams for the future so that they are inspired to improve the quality of their lives.

The staff members were able to express the goals and objectives related to the outcomes of the programme activities but their statements were somewhat impressionistic and not sufficiently developed or specific to be useful in evaluation (also see process evaluation, Chapter 3).

General outcomes. As has already been indicated, there are two focal areas in terms of learners' skills and knowledge development within the programme: increasing knowledge and practical skills for healthy living and general well-being, and increasing environmental knowledge and conservation behaviour, encouraging participants to take responsibility and care of the natural environment for a sustainable future. Two outcomes that are less explicit in the programme documents were revealed as significant outcomes in the stakeholder interviews. These are improved social and emotional development of the learners, and a more positive outlook on life. These outcomes will be explored and then each activity and their expected outcomes will be analysed and assessed within the context of environmental education and wellness promotion. First, academic outcomes will be briefly assessed since they were highlighted in research and evaluations on similar programmes as a key area of concern and are, thus, identified as a possible outcome where the Earthchild Project could increase focus.

Academic outcomes. The Western Cape Education Department (WCED; http://wced.pgwc.gov.za/home/home.html) is mainly concerned with academic outcomes and will primarily support school-based interventions that are likely to improve academic results. Most funders also show preference for after-school programmes that produce academic benefits for learners and are increasingly pressurising interventions to adopt this focus (Granger, 2008). One of the current donor representatives for the Earthchild Project, whose organisation requires more evidence regarding the return on investment from the programmes it supports, intimated that, as funders, they would value seeing definite results on how the programme impacts the learners' studies.

Improving the learners' academic performance and achievements does not seem to be a goal or focus for the programme, which in light of the above could be problematic. Although it was not explicitly stated, however, it was implied a few times by stakeholders that they believed the learners' academic results do improve as a result of the programme. There exists no evidence to back this claim up but the programme director recalled the principal of one of the schools saying that she believed learners who participated in the programme had improved academically. Granger (2008) demonstrated that after-school programmes have great potential to improve academic outcomes but argued that the programme has to intentionally apply academic improvement as a goal, has to contain an explicit academic component, and has to engage the learners actively. Considering the possible impact that the programme could have on the learners' academic performance and the benefits of this outcome orientation, it is suggested that the programme take into serious consideration the possibility of developing and actively incorporating more concrete performance objectives relating to school outcomes.

One of the principals explained that the Earthchild Project was initially linked to the in-class Life Skills lessons for learners and offered an expansion of that curriculum. The Curriculum and Assessment Policy Statement (CAPS; Republic of South Africa, Department of Basic Education, 2011, p. 9) states that "The Life Skills subject is central to the holistic development of learners. It is concerned with the social, personal, intellectual, emotional and physical growth of learners, and with the way in which these are integrated." The lessons cover a broad range of subjects, including social and natural science, personal and social well-being, creative arts, and physical education. These

subjects and the related outcomes–which include "physical, social, personal, emotional and cognitive development; creative and aesthetic skills and knowledge through engaging in dance, music, drama and visual art activities; knowledge of personal health and safety; understanding of the relationship between people and the environment; awareness of social relationships, technological processes and elementary science" (Republic of South Africa, Department of Basic Education, 2011, p. 9)–tie directly into the Earthchild Project activities. The programme director explained that she read the curriculum for the first time in the middle of 2011 and now sees that what they do does fit in with the some of the Government's educational outcomes.

The concretisation and systematisation of academic and other school performance outcomes to be incorporated into the programme could greatly benefit them in terms of getting recognition and support from the WCED, as well as attracting funders. They could consider developing this outcome orientation more explicitly and see how their work can further enrich the existing Life Skills curriculum. Suggestions of how they could do this will be presented in the process evaluation (Chapter 3).

Building meaningful relationships: Social and emotional development. Research suggests that social and emotional factors play an influential role in the academic performance gap between advantaged and disadvantaged learners (Becker & Luthar, 2002). Learning approaches that include supportive relationships, promote positive interactions with adults, and create a sense of belonging are intervention features that could benefit learners by supporting their social and emotional development (Becker & Luthar). Durlak et al. (2011) specified that school-based social and emotional learning should incorporate elements of self-awareness, self-management, social awareness, relationship skills, and responsible decision-making in order to promote learner success in school and life. Developing social and emotional skills in learners involves encouraging learners to contribute to their community in order to feel intrinsically valued, creating a sense of belonging through a caring and supportive learning environment and increasing learners' motivation to achieve (Durlak et al.).

The Earthchild Project facilitators are identified, by most of the stakeholders, as an important component of the programme's benefit to the learners; they are involved with the learners on a deeper, more personal level than the school teachers are able to be. As one of the donor representatives explains, "I think because of the environment that they're in, a lot of these kids don't have the typical support structures–family support, friends, and even the schools–so this (being part of the Earthchild Project) for them is a way of getting that." The programme founder and director also points out the general lack of loving and supportive relationships for many of the children in the underprivileged communities in which they work, where there are scarce resources and hardship.

One of the factors found to be most influential in after-school youth development clubs for low-income children is giving them the opportunity to form meaningful relationships with caring and stable adults (Roffman, Pagano, & Hirsch, 2001). All of the donor representatives mentioned the positive social interaction and support that the facilitators give learners as significant components of the programme. As one explained:

> I think it really does benefit them and gives them a lot of moral support, a lot of emotional support. The facilitators work with them very hands-on and I think it really helps them progress and develop.

> So from an educational side, yes, but also from an emotional and developmental side, I think it has really done well.

The learners' social and emotional development could lead to other positive outcomes and benefits, including developing social and emotional competencies, improved academic performance, wellness and health-promoting behaviour, and contributing more positively to society (Durlak et al., 2011). These outcomes fit major aims and vision for the programme, as proclaimed on their website (www.earthchildproject.org): "Earthchild Project aims to nurture and develop a new generation of conscious, confident and responsible earth children."; "Earthchild Project has a vision of a world where individuals are inspired to connect with themselves, each other and the environment."

Developing positive outlooks. When one of the donor representatives was asked about the main benefits he believed that the target population were getting from the intervention, he responded:

> More than anything, giving these young people a positive outlook on life. Particularly where it's aimed at the moment, the situation they (the learners) are in, you know, they're not in the easiest position to become successful and so what they (the Earthchild Project) are doing is really giving them a good nudge in the right direction, giving them positive reinforcement and showing them that there is a way.

The programme founder and director also emphasized the positive development of the learners as an important outcome of the programme:

> The skills [offered by the programme] can develop a positive sense of self, and increased sense of esteem and, confidence. I think we've seen that happening in the kids we've been working with for a number of years; obviously those are harder to measure but we've seen that impact and obviously that is very important, for us it's more important than learning facts about gardening or nature or healthy living.

The programme is largely about preventing potentially negative conditions for participants and the environment by creating optimism and inspiring positive changes. They concentrate on teaching and showing the teachers and learners about the benefits and rewards of adopting healthful lifestyles and environmental conservation behaviours in a positive and uplifting way. One of the core mechanisms behind positive development interventions is building resilience, which allows one to overcome and persevere in challenging situations and is seen as an important part of developing sound judgement (Forbes, 2003). Youth development programmes with a positive intervention approach–such as the Earthchild Project–believe that one should build up the strengths and the inherent good of individuals for them to make the right choices in life. Catalano, Hawkins, Berglund, Pollard, and Arthur (2002) suggested, however, that a prevention approach that draws attention to and addresses risk factors within the environment can complement a positive promotion approach that looks at the holistic protection of youth. One of the Earthchild staff members acknowledged that a fear-based (prevention) approach could be effective in certain situations, for "people that need a lot of stimulating, it wakes you up, it makes you want to do something". She felt,

however, that there were enough environmental interventions using this technique and that the positive approach adopted by the Earthchild Project was getting through to the learners more successfully.

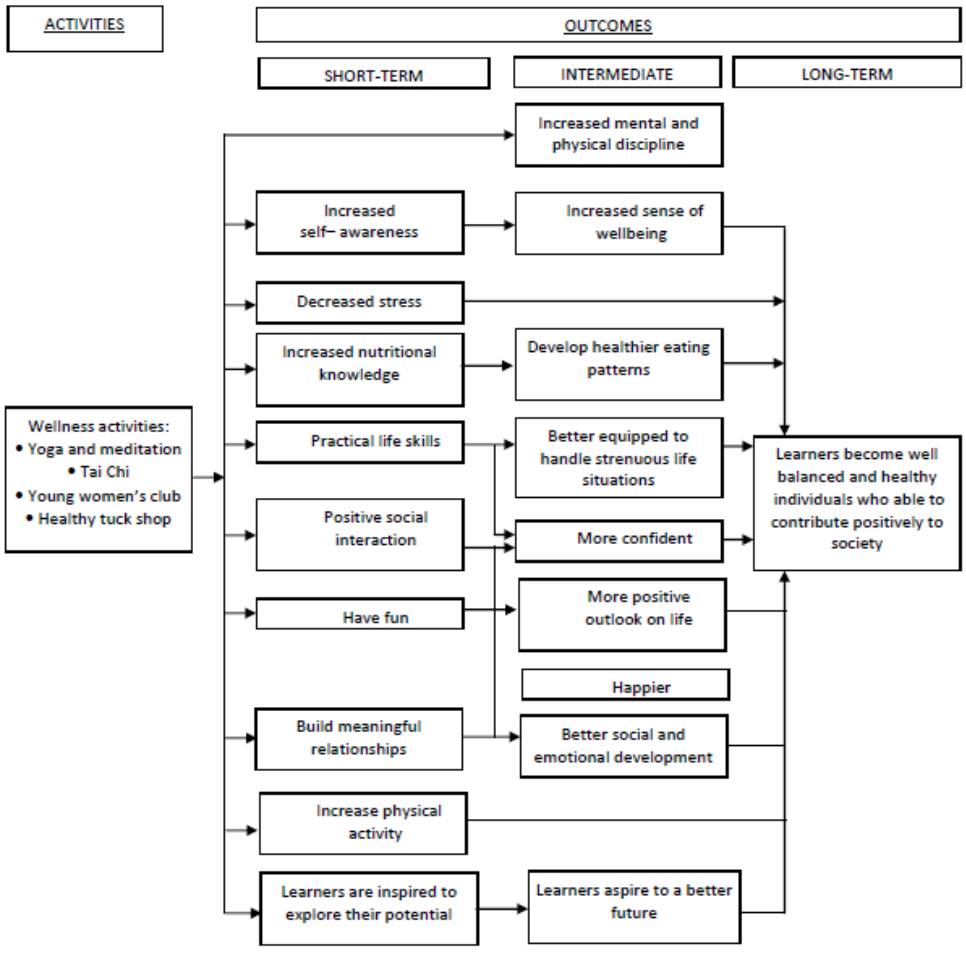
One of the donor representatives believed that the facilitators' positive engagement with the learners is one of the key strengths of the intervention. He says:

> They [the learners] believe it is something that they belong to and are part of as opposed to a dictatorial teacher who is standing there and barking instructions at them...I think that what it [the Earthchild Project] has done very well is that it's gotten the kids to buy into it. You know, and make it feel like it's their course; like they own it.

A holistic education approach considers the reasons for knowledge acquisition as important as the type of knowledge acquired; proposing that knowledge acquired through personal volition is more valuable to the learner than knowledge acquired through coercion (Forbes, 2003).

Healthy living and wellness outcomes. The Earthchild Project promotes wellness through activities (such as yoga and meditation, Tai Chi, the young women's club, and the healthy tuck shop initiative) that are believed to teach the learners healthy habits that will improve their physical, spiritual, and mental well-being. The logic model below (Figure 4) illustrates the outcomes proposed to occur as a result of the health and wellness activities offered.

Figure 4. Logic Model of Learner Outcomes for Activities Relating to Health and Wellness



Yoga and meditation. As indicated on the outcomes logic model (Figure 4), the programme proponents believed that the regular yoga and meditation lessons, given to the learners as part of the clubs and the Living Classrooms programme, will decrease their stress and give them the practical skills to handle stressful conditions in a positive and constructive way. It promotes a sense of self-awareness, which they associate with an increased sense of well-being. One of the donor representatives believed it is an important part of the intervention: "I think yoga and the meditation are very interesting ways for the kids to channel that negative energy, you know – understand and internalize it and get it out in a non-violent, rather than a temperamental way."

Yoga has gained popularity as a technique to discipline the body and focus the mind. It is proposed to be of spiritual, mental, and physical benefit to regular practitioners (Lamb, 2004). A review of the existing research on yoga as a therapeutic intervention for adolescents (up to 20 years) suggests that it is particularly useful in promoting physical activity in children, mental self-control, and a sense of self-awareness (Birdee, Yeh, Wayne, Phillips, Davis, & Gardiner, 2009). Results were rendered inconclusive, however, due to research weaknesses such as inadequate information on the nature of the yoga interventions and generally poor methodological quality of the studies.

Physical activity and body awareness are noted as two of the main short-term outcomes for yoga. One of the facilitators recognised that a lack of exercise is a problem in the communities in which they work and believed that yoga provides a non-competitive and non-judgemental space for the learners to exercise and connect to their bodies. This is consistent with findings that advocate yoga as a form of moderate to low-intensity exercise that offers an alternative to children who are not inclined to participate in sport and other physical activities and encourage them to become more active and healthy (Birdee et al., 2009). A recent study by McVeigh, Norris, Cameron and Pettifor (2004) revealed that children in South Africa, especially the majority of black children, are not getting sufficient physical activity, which makes them increasingly vulnerable to diseases such as osteoporosis and obesity, which in turn leads to hypertension and diabetes. They suggest that the "development of a culture of exercise is seen as being important in attempting to address these problems" (p. 1011).

Sitting-meditation techniques were found to be effective in improving certain physiological, psychosocial, and behavioural problems in children in a systematic review of 16 studies on meditation interventions for children aged 6 to 18 years (Black, Milam, & Sussman, 2009). Once again, the low methodological standards of the existing research was noted and the authors specified that more rigorous research needs to be done in this area, especially concerning the positive influence meditation concerning "mood enhancement, social intelligence, and self-regulation" (p. 538). Meditation is also considered an effective tool for developing awareness and an understanding of the self, a fundamental intention of holistic education. (Forbes, 2003).

Tai Chi. The Tai Chi club is a relatively new addition to the programme. The group was formed, according to the programme director, because:

> We were aware that it's mainly girls [who participate in the programme] and we wanted a space where it could just be boys. It was the old garden club boys because they'd had enough of the garden club and we wanted a space where they could become like young men.

The main intention behind the club was to give the boys a sense of belonging and group identity and the activity offered by one of the few male volunteers, Tai Chi, seems to fit in well with the alternative, health-promoting activities that the programme offers.

The alleged benefits of Tai Chi include enhanced overall well-being, relaxation and mood, as well as improved self-awareness, self-efficacy, and sense of connection with other beings (Dechamps, Lafont, & Bourdel-Marchasson, 2007; Wall, 2005). A review of research regarding the practice of Tai Chi for children was inconclusive, however, as to whether the practice does significantly benefit this population (Dechamps et al.). The study concludes that insubstantial evidence was found to suggest that Tai Chi interventions are significantly more beneficial than other forms of moderate exercise programmes but that generally longer term interventions may be needed to learn the subtleties of this technique in order to benefit fully (Dechamps et al.). Wall (2005) explained that Tai Chi is an intricate practice that requires considerable concentration and patience from learners and is, thus, generally not suited to children. He demonstrated, however, that a practice combining Tai Chi and a technique called *Mindfulness-Based Stress Reduction* was able to retain adolescents' attention and, if taught correctly, could potentially be very beneficial.

As was implied previously, however, the purpose behind this club seems to be more about engaging the boys in a pro-social activity that promotes healthful behaviour so that they can remain part of the programme than about the Tai Chi necessarily. Research does indicate a need for interventions aimed at young boys growing up in townships where poverty and deprivation prevail (Matthews, Griggs, & Caine, 1999). By introducing this all-boys Tai Chi group, the programme is trying to engage the young boys with the objective of achieving a number of outcomes, including keeping them off the streets, creating positive social interaction for them to form meaningful relationships, giving them a more positive outlook on life, and instilling values such as respect.

Young women's club. One of the Earthchild Project staff members started the young women's club for 12 Grade 8 and 9 learners in Khayelitsha because, working closely with the learners and coming from the townships herself, she recognised that many girl learners have low self-esteem and look down on themselves because of their backgrounds and where they come from. The underlying assumption of the club is that if the girls gain confidence and a positive outlook on life, if they are exposed to the possibilities and given the right opportunities, then they will lead more successful, productive, healthy, happy, and well-balanced lives. As one of the newsletters explained, "Through the Five Rhythms dance practice, creative arts, sharing circles and mentoring, the girls are acquiring practical tools to create positive transformation in their lives and to support them in overcoming their harsh realities." A variety of activities are offered at this club; the learners are taught practical skills, such as computer skills, given knowledge, for example about careers, offered an opportunity to share about personal problems or ask questions, and to have fun, through dance sessions and outings.

The young women's club fits the description of a youth development programme. A review of the literature pertaining to the evaluations of youth development programmes concluded that no one particular approach seems to make these interventions a success but that certain themes appear to be common to the more effective programmes (Roth, Brooks-Gunn, Murray, & Foster, 1998). One of the factors was creating a "place of hope" (p. 442)

for the youth where they felt safe to open up and share with facilitating adults. The underlying assumptions of the more successful programmes also viewed youth as having potential and needing to be nurtured rather than being problems that need to be managed. Roth et al. proposed that youth development programmes should have a family-like orientation and create a sense of belonging for its members. They suggested that the types of activities offered are less important than the participants' active involvement in all stages of the activity, from the conceptualisation of the idea to its implementation. Programmes that incorporate these elements seem to produce positive outcomes and programme recipients could potentially gain skills and knowledge to appropriately deal with difficulties that high-risk youth face and engage in healthier, pro-social behaviour (Roth et al.). The young women's programme incorporates all Roth et al.'s recommendations and can be reasonably expected to contribute to positive outcomes for participating learners.

Healthy tuck shop. The Earthchild Project initiated and manages a healthy tuck shop initiative at one of their main schools. A facilitator leads and assists a group of eight grade five learners who are responsible for running the tuck shop. The intended outcomes for this initiative are twofold: firstly, to promote healthier eating within the school and teach the eight Earthchild learners about nutrition and healthier food choices; and secondly, to give these eight learners the responsibility and practical skills of how to run a small entrepreneurial venture.

A study conducted in Cape Town, South Africa, regarding the types of foods eaten by learners at school found that the majority of learners consume what was pre-determinately classified as *unhealthy food* (Temple, Steyn, Myburgh, & Nel, 2006). Furthermore, the authors found that learners from schools in lower socio-economic areas were less likely to bring food to school and, thus, more likely to purchase unhealthy options from the school tuck shop. Another study that investigated the dietary behaviour of learners in disadvantaged areas of South Africa reiterates the problem of poor nutrition at schools, claiming that 49% of the 717 grade four learners surveyed had purchased something from the tuck shop, which only offered unhealthy options (Abrahams et al., 2011). The healthy tuck shop initiatives teaches the Earthchild Project learners about nutrition and healthy choices, while also providing the larger school community with the opportunity to make healthier food purchases of fruit, dried fruit and nuts as well as creating awareness about healthy eating.

Even though the programme can give the learners nutritional knowledge and perhaps influence the food they choose to purchase at school, often the learners are not in control of their lunchbox and home food choices. Abrahams et al. (2011) pointed out the limited influence that learners actually have over their nutritional choices and finds that learner's lunchboxes–presumably packed by parents or guardians–consisted mainly of white bread and processed meats. Thus, it is critical to get parents and teachers involved in this type of healthy eating intervention in order for it to be truly effective. One of the facilitators recognises this problem:

> You ask them [the learners] to bring healthy food to an outing and they do tell their parents and then they come with chips and chocolates and stuff and then they say, 'This is all that my mom put in for me.'

The programme facilitators said that they do write letters to the parents suggesting what they should and should not pack into the learners' lunchboxes in an attempt to address this problem. More attention could be given to this influential area.

Teacher retreats and workshops. It is common knowledge that the majority of government schools in South Africa, especially those in disadvantaged areas, are overcrowded and under-resourced. Research by Shalem and Hoadley (2009) confirmed that South African teachers generally struggle with low morale and frustration as a result of the teaching structures and challenging conditions in schools. Without the adequate knowledge or skills to cope with their working environment, teachers take strain and many are leaving the profession because they feel they are overworked, underpaid, and unappreciated (Shalem & Hoadley). Through working in schools and being in close contact with the teachers, the programme staff recognised the need for teachers to learn practical skills to cope better in these strenuous conditions and to lead more balanced lives to, in turn, provide better teaching services and support to their learners.

The programme cannot–due to its limited capacity in this regard–address the cause of the teachers' stress but offers an alternative, pragmatic solution by showing them how they can practically manage their stress through healthy lifestyle choices. The programme attempts to boost teacher morale, increase positivity and provide them with skills for reducing stress by running teacher workshops and retreats that focus on self-development. The intervention is admittedly relatively small scale in comparison to the extent of the problem but they maintain an underlying belief that if they can impact the personal and professional lives of just a few teachers, then they have made a difference.

The health status of educators was found to be particularly poor in a formative assessment of a school-based health programme for primary schools in disadvantaged communities in and around Cape Town, South Africa. Results showed that 31% are overweight, 47% obese, 56% hypertensive, 80% of them smoke, 30% have high cholesterol, and 77% low physical activity (Draper et al., 2010). This study highlighted the need to not only educate learners about healthy living but also educators, for their personal well-being as well as their learners, since they play an influential role in teaching and encouraging healthy living. The Earthchild teacher interventions teach them practical techniques, such as yoga and healthy eating, in an attempt to instil healthier lifestyle choices and behaviours.

Themes that emerged in Lauzon's (2003) research on teachers' understandings of and their subjective needs regarding wellness support the Earthchild Project assumptions. Teachers in this study expressed their belief that wellness should be holistic, support a balance lifestyle, encourage a sense of self and self-responsibility, promote job-satisfaction, and provide a supportive working environment. The programme proposes that by giving teachers practical tools to enhance their personal well-being and helping them to develop better interpersonal skills they will be more effective teachers. One of the Earthchild Project newsletters quoted what some of the teachers had written in the retreat feedback forms regarding how they have benefited; they said:

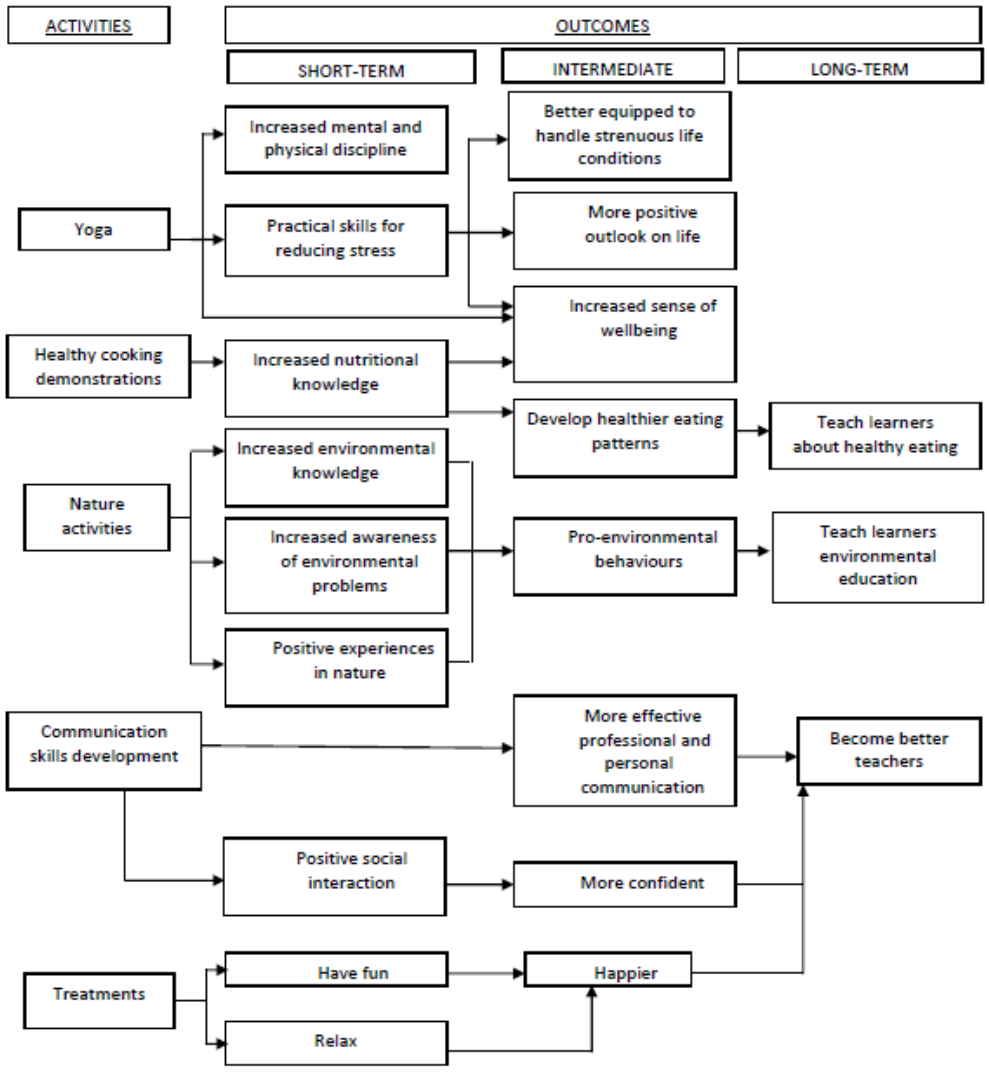
"I have changed my diet. I now eat fresh veggies instead of canned and frozen ones and I also drink lots of water. I am feeling much healthier."

"I have become a more relaxed and tolerant person. I am more positive and reflect positively with my learners."

"Exercise is helping me to improve my health in such a way that I haven't taken any of my heart tablets since the last retreat."

Although the focus of the teacher intervention seems to be on increasing health and wellness, it does also have an environmental education aspect. They include nature-based activities, such as hikes, and talks that give the teachers practical tools for environmental conservation, such as recycling, composting, worm farming and vegetable gardening, in their programme. The programme stakeholders indicated their hope and belief that some of the knowledge and positive attitudes towards healthy living and environmental sustainability will be fed down to the learners through the teachers to influence their lifestyle choices. Figure 5 presents a logic model of the outcomes associated with the teacher activities

Figure 5. Logic Model of the Teacher Retreat and Workshops Outcomes



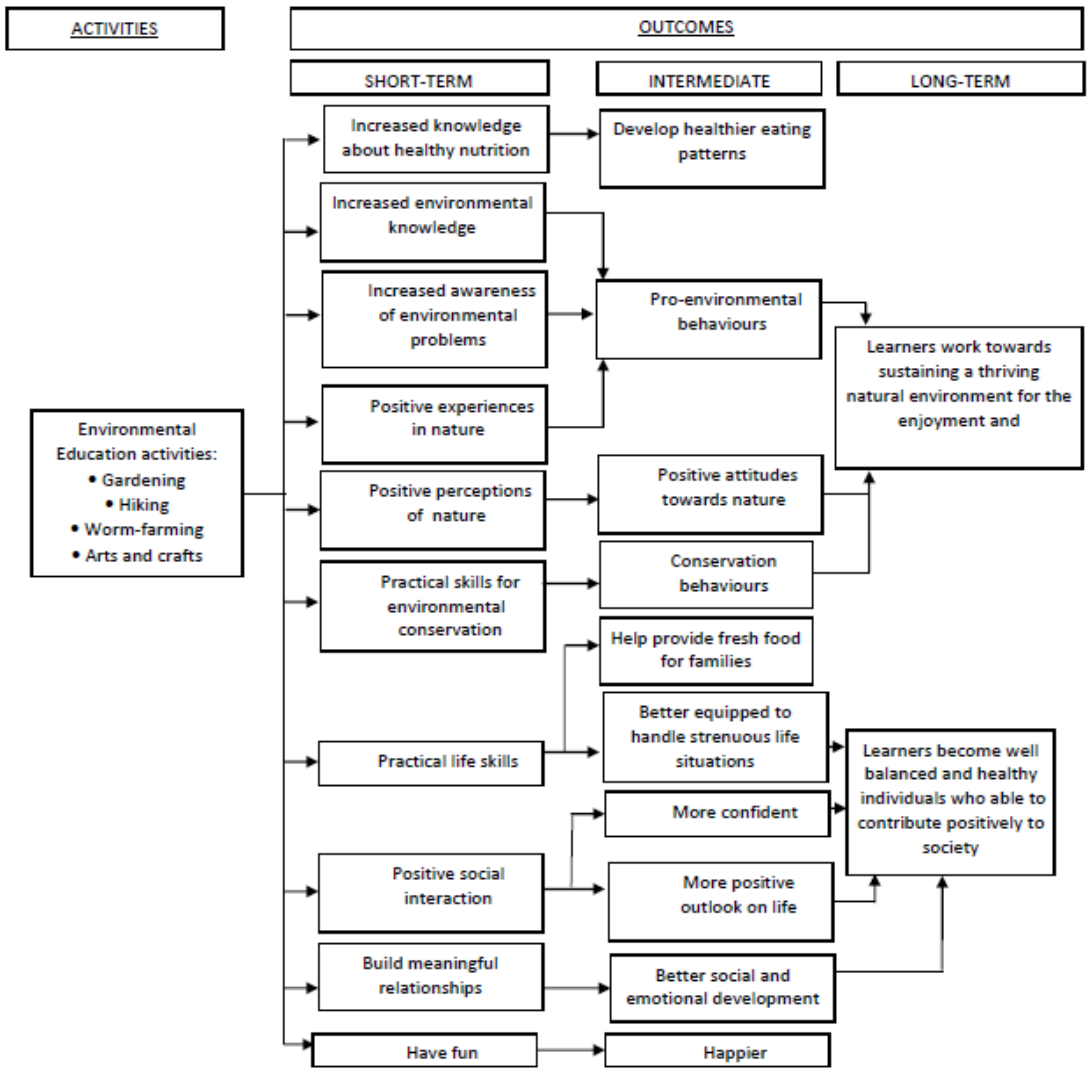
Environmental education outcomes. The Earthchild Project philosophy proposes that by engaging children in fun and interactive activities, such as gardening and hiking, with the natural environment, they will develop more responsible and caring attitudes and behaviour towards nature. This idea is consistent with Johnston (2003) who suggested that learning about sustainable development in an "experiential, participatory way" (p. 121) is effective in maximizing the potential for changed behaviour. Morgensen and Mayer (2005) proposed that environmental education is not merely about teaching information and skills. They explain, "Environmental Education is just as much a search for meaning as it is for more or less objective knowledge" (p. 13). The programme encompasses this broader philosophical understanding of ecological learning by encouraging learners to develop a deeper connection to the earth through meaningful and practical engagement and interaction with nature in their activities.

In his research on an environmental education programme, "Living Along with Nature", for children between the ages of five and nine, Gonzalez (2003) emphasized the value in "making knowledge more attractive with entertaining activities" (p. 127). This is consistent with the assumption held by the Earthchild Project that by introducing the children to ecological concepts through activities that are fun and experiential, such as hiking, gardening and worm-farming, they can influence the children's values and attitudes towards themselves and their environment, encouraging them to take responsibility for and care of both. Once again, we see that even though the assumptions underlying the programme activities were not developed from social scientific knowledge they are relatively consistent with research theories. Empirical research suggests that knowledge and information do not significantly influence environmental behaviour, whereas ecological experiences support pro-environmental behaviour (Finger, 1994). Figure 6 illustrates the proposed outcomes for the environmental activities offered.

Hiking club. Ashwell (2010) noted that many environmental education programmes offered in schools in Cape Town, South Africa, are structured on curriculum-based learning objectives; findings from a survey that she conducted with high school learners concerning their environmental attitudes, however, indicated that learners would like to have more unstructured, reflective time to connect with nature on a deeper, more personal level. Her research supports the notion of nature as a "formative place" (p. 223) where young people can experience a sense of belonging and identity and she proposed that nature can play a beneficial role in the process of development and identity formation. The facilitators' experiences are consistent with this finding; as one of them explained, "Sometimes you'll find kids who are not interested at all in what you're doing but they will still keep coming to the group because they want to belong, they want that sense of community."

The programme website (www.earthchildproject.org) explains that, "The Hiking Club offers children an opportunity to escape their harsh realities." There is a direct relation between the socio-economic status of various schools and the learners' ability to access natural environments; research indicates that many underprivileged learners in Cape Town would like to go out in nature more often but are restricted from doing so due to transport, financial, and safety barriers (Ashwell, 2010). One of the facilitators proposed that the hiking club was developed to give learners the opportunity to go out in nature; she said, "The whole intention behind it was to introduce kids from the township into nature cause for them it was something very foreign."

Figure 6. Logic Model of Learner Outcomes for Activities Relating to Environmental Education



Garden club. An interesting connection has been established between greener, natural environments and three forms of self-discipline–concentration, impulse inhibition, and delayed satisfaction–in inner-city children (Faber Taylor, Kuo, & Sullivan, 2002). A positive correlation was found between these areas of personal regulation and greener residential scenery, particularly for young girls. Through the gardening club, the Earthchild Project has created greener environments for the schools in which they work.

There is evidence that adding more nature into the learning environment has potential benefits for learners. Using the Environment as an Integrated Context (EIC) for learning is a framework that encourages "interdisciplinary, collaborative, student centred, hands-on and engaged learning" (Lieberman & Hoody, 1998, p. 1) within a natural environment setting. The major benefits observed in learners who participated in programmes that support this framework included improved academic performance, decreased disciplinary problems, increased engagement and enthusiasm for learning, and greater pride in their achievements (Lieberman & Hoody). One of the donor representatives highlighted the difference in the way the Earthchild Project schools look compared to other schools in these communities. He described how on a visit to one of the schools:

> When we were driving away, it was like, wow, I can't believe this school is in Khayelitsha. It looks like one of your top schools, you know the grass is green and friendly kids–they run and they hug the teachers–while if you go to the school next door, it looks completely different.

The principals of the two main Earthchild Project schools both mentioned the impact they believe that the gardens have had on the learners. One of them explained that having to take care of the gardens, even during break times and school holidays, gave the learners a sense of responsibility and claimed that she had seen how involvement with the Earthchild Project had positively influenced learners' behaviour in the classroom. The other principal also highlighted the influence of the garden. She said:

> The children who belong to Earthchild, they seem to me to be a different kind of child. They seem to be calmer as I said and they're more organized children, they're really becoming Earth children, if you know what I'm saying. Many times I'll find them here [indicates to school vegetable garden] during the intervals and they will come and they will look after the garden.

Vegetable gardening. The Earthchild Project believes that teaching learners how to grow vegetables does not only teach them a practical skill but also gives them the holistic benefits of nutritional knowledge and respect for nature. This activity is seen as simultaneously teaching the learner a useful life skill, promoting their well-being, and generating environmental awareness and positive experiences in nature, which they believe will translate into pro-environmental behaviours.

One practical benefit of the gardening programme is the food harvesting, where the vegetables can be used to feed the learners a nutritious meal. One way in which the project could support sustainable development in the surrounding community would be through this practical benefit of increased household vegetable gardening to support nutritious eating. Many of the media articles on the Earthchild Project emphasise the value of teaching learners to grow their own vegetables seeing it as a significant and practical benefit of the programme, especially for the disadvantaged communities in which the Earthchild Project works. One article in a local newspaper, *Vukani*, titled "Young Boys Feed Their Families" (Mpeshe, 2009) relates how some of the young boys in the Earthchild Project garden club had set up their own gardens at home, which provide vegetables for their families. They mentioned the pride that these boys feel for being able to contribute positively to the household and how the boys want to take their skill and passion for gardening further to become farmers one day. One of the donor representatives described how when he visited one of the schools, a learner took him to see the vegetable garden that he had established next to his shack. He conveyed the possibility of vegetable gardening becoming more wide-spread in the community as a result of people seeing how these learners make their own food and emulating that.

In an evaluative review of the outcomes and benefits of school gardening in the USA, Blair (2009) demonstrated that in the majority of studies (nine out of twelve) positive results revealed measurable improvements in the children's behaviour and achievements, particularly in areas of science and higher order cognitive skills. Although these outcomes were not explicitly stated by the programme stakeholders, many of them implied that

there are extensive benefits to the activities they offer. For instance gardening, especially vegetable gardening, may not only be a useful skill but also support experiential learning.

Practical information regarding correct nutrition was emphasised by one of the Earthchild Project benefactors as a core benefit of the programme to learners. He believed that the programme taught a holistic understanding of nutrition to the learners, which is "not only about knowing your foods" but also integrates "interaction with the environment and with nature–to understand that process." One of the school principals indicated that the ecological and nutritional awareness created by the presence of the garden extends beyond the garden club learners to the broader school community. She said, "It made us aware of lots of different things. The nutritional value of the vegetables and the herbs and the stuff that they grow there and the way they are caring for the garden." An article in *The Big Issue* (Webber, 2008) highlights how, by teaching learners vegetable gardening, the Earthchild Project simultaneously supports sustainability, a connection to the natural world, and encourages correct nutrition.

Worm-farming. The worm-farming club teaches learners how to breed and manage earthworms in order for them to turn organic waste matter into fertilizer that can be used in the school gardens. It is a hands-on approach to environmental education for sustainability; according to one facilitator it increases learners' knowledge on and awareness of waste, encouraging them to take responsibility for their own waste products and ultimately to care for the environment responsibly.

The Earthchild Project website further claims that worm-farming is an effective way to encourage learners' spontaneous interest in the natural sciences, where real life experiences, observations, and interactions with nature support the holistic learning process; it states that, "the worm farm will encourage their interest in natural science and the real life interaction and observation can be used as a window into Learning Areas such as biology and ecology." Research by Rahm (2002) supported this idea; he proposed that science is embedded in nature and, thus, interactive, school-based programme activities that are set in and structured around nature–such as gardening or worm farming–provide a valuable opportunity for learners to actively and meaningfully engage with scientific investigation.

Lewis, Mansfield, and Baudains (2008) reported that apart from encouraging environmental sustainability and conservation, worm-farming with children is associated with promoting care and respect. One programme facilitator identified the development of care and respect as key needs for their target population:

> When you know the kids and you see how they interact with each other and if you hear about their living conditions at home, it's [*sic*] a big need for them to develop themselves into respectable human beings and we're kind of helping them to get to that point because it's not really something that they know they're doing wrong.

One of the school principals also pointed out the value of respect that learners involved with the Earthchild Project have developed; "They respect those plants and worms, they respect them and they wouldn't even steal them [*sic*] so that's another value that's being instilled in them by being involved with the Project."

Arts and crafts. The programme director and some of the staff members indicated that, from their understanding, the learners in these underprivileged communities do not get sufficient opportunities to express themselves creatively. One of them mentioned that while in more privileged homes, children are encouraged to be creative and are provided with the appropriate materials, such as paper and colourful crayons, in the township homes this is not the case. They believed this to be an important part of learners' development and since, from their experiences, the schools do not offer adequate opportunities to develop creativity either, they introduced the arts and crafts club. One of the main outcomes for this activity is to develop the participants' creativity. The principles of reusing and recycling as a means to developing environmental conservation behaviours and sustainability are also emphasised in this activity through teaching the learners how to transform things that could be considered junk into useful or artistic objects.

Art can be a beneficial activity for the positive development of visual-spatial abilities of at-risk youths; its main advantage, however, is that it provides a potential opportunity for learners to find something that they are good at and reverse detrimental patterns of underachievement (Silverman, 2004). The development of creativity is also proposed to have an association with the development of cognitive and affective abilities and is suggested as an important aspect of education and learning (Fasko, 2001). An evaluation of the literature on creativity and education suggests that here are multiple ways to develop creativity, however, and stresses the importance of the development of creative thinking, such as questioning assumptions and generating innovative ideas, rather than skill acquisition (Fasko).

MacEachen (2000) argued that crafting, which includes "a demonstration of skill (as a bodily way of knowing material) and concepts of beauty" (p. 189), can be a valuable tool in environmental education; the practical and positive engagement and interaction with environmental issues and the natural world can create positive attitudes and awareness that could translate into conservation behaviours. The very act of using something wasteful to create something useful is considered environmentally-friendly and if the learners carried on with using their crafting skills, they could make a difference to environmental issues.

***Living Classrooms initiative*.** A classroom-based intervention implemented in a primary school in KwaZulu Natal, South Africa, incorporated physical activity and teaching healthy eating habits into the existing school curriculum, which lacked these life skills (Naidoo, Coopoo, Lambert, & Draper, 2009). The intervention was found to be effective in improving learners' physical activity and health behaviours and the authors suggested that school-based programmes that support regular physical exercise and healthy eating could be one of the most effective strategies for reducing chronic diseases associated with unhealthy lifestyle choices. The Living Classroom initiative integrates some of the Earthchild Project activities, such as yoga, gardening, worm farming, into an in-class

intervention that addresses wellness and environmental education intervention. The outcomes are similar to those of the previously mentioned activities, since these are the activities included in the initiative.

Holiday programme. The main intention behind the holiday programme is to keep the learners occupied and off the streets while school is on holiday; one of the taglines for the holiday programme, used in an email, was "Play at school, streets are dangerous". Halpern (2002) stated that out-of-school programmes for children, especially for those who come from low-income communities, have the potential to relieve boredom and idleness as well as lower their risk of engaging in "self- and socially-destructive behaviour" (p. 178). Many of the activities offered are ones that the programme already incorporates, such as yoga, and arts and crafts, that, thus, have the same outcomes as have already been mentioned; other of the activities, such as sports and dance, are rather general, however, and not expected to have outcomes specifically related to the programme main outcomes of wellness and environmental conservation behaviours.

Conclusion

A theory evaluation is useful in understanding the assumptions on which a programme is developed and can help to illuminate preliminary flaws in the foundations of the intervention, in terms of its underlying structure and purpose. The Earthchild Project was established and continues to develop in an unsystematic way that is based predominantly on the programme staffs' personal beliefs and practical experiences relating to the needs of the target population and the presumed outcomes of their activities. Although the activities are not based on social scientific theories and little research has been done in developing the programme, the outcomes theory evaluation, which compares the stakeholders' assumptions to existing literature, suggests that most of the programme logic is generally relatively sound and plausible. This being said, the programme could benefit greatly from consulting social scientific literature and developing their underlying theory and goals and objectives in a more systematic and purpose orientated way to create a more concrete and specific focus that is appropriately aligned to the needs of the target population. The process of incorporating activities in the programme often seems to be haphazard and unjustified; this could waste precious time and resources and dilute the potential impact of the intervention.

The programme stakeholders and literature tended to express the goals and objectives of the intervention outcomes in terms of long-term impacts or visions; to aid the monitoring and evaluation of participants' performance in the various activities, they may find it helpful to focus on fewer activities and develop more achievable, short-term outcomes. The variety of activities that the programme currently offers is rather extensive but does not necessarily provide greater benefits to recipients than a more focused approach could. Consideration also needs to be given to the prospective evaluation of the proposed outcomes, as this is what will essentially create accountability for an intervention (Rossi et al., 2004); formulating an assessment of whether the programme does, in reality, bring about the changes that they claims it does would perhaps lead to a more modest assumption of intervention outcomes.

The programme could consider incorporating a more academic orientation within its current activities, given the potential impact it could have and the importance of school performance for potential funders and supporters. The activities, such as the nutrition and healthy eating and even the yoga (as a form of physical education) and breathing exercises, could enrich the Life Skills curriculum, while activities such as the gardening and worm-farming could tie into the physical and natural science subjects. Improved nutrition and exercise are highlighted in the literature as a need for teachers and learners in South African schools; as a response to these findings the programme could really focus on the yoga exercises and the healthy tuck shop initiative. There is also a validated need for the teachers' retreats, which have the potential to impact the teachers who in turn have the potential to further impact their learners and the entire school. The young women's club incorporates various activities that seem to be orientated towards their proposed outcomes but the staff could do more formal research into these activities to ensure they are logically linked to specific goals and are creating the maximum benefits. The all-boys, Tai Chi group could also be reassessed in terms of whether it creates maximum benefit for participants according to their specific needs.

CHAPTER THREE: PROCESS EVALUATION

A process evaluation examines the internal functioning of an organization to determine how well the programme has been implemented and if it is functioning efficiently to provide the intended service to the target population (Rossi et al., 2004). It is an important aspect of evaluating interventions; it provides a context for outcome evaluations by determining the quality of service provided by the organisation and received by the target population, informing possible reasons why the intervention has not produced the expected results (Munro & Bloor, 2010). The organisational assumptions presented in the theory evaluation (Chapter 2) are practically assessed to determine whether the actual implementation process is congruent with the articulated plan (Rossi et al., 2004).

The Earthchild Project has been running for over four years and is considered by the majority of stakeholders to be in a more mature stage of implementation; procedures and rules have become established. At a mature stage, a process evaluation becomes primarily relevant for addressing accountability (Chen, 2005). The researcher found, however, that the programme was not sufficiently established to be considered mature and, thus, adopted a formative approach as means to further develop the programme and its organisation. This section of the evaluation examines the social and organisational processes involved in the delivery, reception, and context of the intervention. The service delivery and the extent to which participants are being exposed to the intervention are key components in the analysis. Because there is always variability in actual programme implementation, conducting a process evaluation will allow the researcher to make inferences about the effectiveness of the intervention from an organisational perspective (Baranowski & Stables, 2000).

Key factors considered in a process evaluation include the fidelity of programme implementation, the dose of the intervention delivered by the programme and received by the target population, the reach of the programme, and the contextual factors that may influence how the programme operates (Saunders, Evans, & Joshi, 2005).

The research questions focussed on for the process evaluation of the Earthchild Project are:

1) What is the fidelity and extent of the programme's implementation?

2) Is the programme reaching and engaging the target population as intended?

3) What operational issues and support functions influence the implementation of the intervention?

Fidelity of Implementation (FOI) is an important aspect of evaluating an intervention. Century, Rudnick, and Freeman (2010, p. 202) defined FOI as "the extent to which the critical components of an intended program are present when that program is enacted." Fidelity thus refers to the quality of the programme implementation, while extent refers to the amount of the service that is provided. The first evaluation question addresses the fidelity and extent of the programme implementation, which together indicate the dose of the intervention delivered and received; by evaluating these aspects of a programmes process, one verifies its internal validity (Baranowski & Stables, 2000).

Reach refers to "the extent to which the program contacted or was received by the target group" (Baranowski & Stables, 2000, p. 160) and concerns the components of the intervention delivered as well as the participants receiving them. The second question addresses the coverage and potential bias of the Earthchild Project and reveals the extent to which the target population actively participates in the programme and the extent to which particular subgroups may have higher participation rates (Rossi et al., 2004).

The last question looks at organisational factors that facilitates or inhibits the implementation and delivery of the programme. Efficient organisational and operational support is crucial for effective programme delivery and, thus, must be monitored and evaluated (Geiger & Britsch, 2003; Rossi et al., 2004; Scheirer, 1996). Key programme support functions, as identified in the theory evaluation, will be practically assessed.

Method

Procedure

The researcher initially intended to evaluate programme processes through the systematic assessment of past records held by the Earthchild Project, including the attendance records and the activity feedback forms completed by facilitators. In the end this was not feasible, however, because the records were mostly disordered and incomplete. Data constraints due to poor record-keeping are frequently a challenge for evaluators (Bamberger, Rugh, & Mabry, 2006). A "RealWorld approach" to evaluation acknowledges the significant contextual constraints that in many cases make it impossible for evaluators to utilize more robust methodological designs and suggests that in such instances it is appropriate to apply a variety of evaluation methods (Bamberger et al.). In this case, interviews and systematic observation were the most feasible options to assess the organisational processes and service activities.

Interviews with stakeholders and systematic observations of stakeholder meetings and the programme activities provide insight into how the programme functions and facilitate a cohesive understanding of the programme (Rossi et al., 2004). The interviews conducted with key programme stakeholders–including five funder representatives, four staff members, and the principles of the two main schools–gave a good idea of how programme stakeholders expected and believed that the intervention is being delivered to the target population. Interviewing is a limited approach, however, in terms of understanding how the programme has actually been implemented and is being delivered, since people are often inaccurate in their informal assessments, resulting in invalid reporting (Gillham, 2008).

To strengthen the findings and provide a more comprehensive understanding of the programme's implementation, the researcher conducted systematic observations of stakeholder meetings and the various programme activities. A semi-structured observation technique was adopted using a set of questions developed from preliminary observations, interviews and the literature to guide subsequent observations. Although the checklist was useful in guiding the basic observations, it was quite restricting and not appropriate for many of the observations. The researcher, therefore, did not only use the checklist but additional, unstructured notes were

taken. This allowed the research more flexibility in order to identify any significant or novel events that were observed (Gillham, 2008). A total of 11 of the learner activities were observed, including a variety of five of the after school activities, four in-class, Living Classroom sessions, and two of the holiday programmes. It was not possible to observe any of the teacher interventions but the researcher did have opportunities to informally observe facilitators' interaction with teachers on various occasions; informal notes were taken of these. The researcher observed two staff meetings and spent some time at the office to observe internal organisational functioning. She also observed the facilitators within the school environment to assess their functioning within the field and their general interactions with teachers, principals, and learners. The researcher arranged the observation sessions with the appropriate facilitators or staff members. The first session was on 2 August, 2011, and the last on 6 October, 2011; the observation period was, thus, about two months.

The observation data, stakeholder interviews, and the limited attendance and feedback data were compared to the organization plan and service utilization assumptions stipulated in the programme theory evaluation.

Instruments

The researcher devised an observational checklist (see Appendix E) for assessing the learner activities using a framework for determining Fidelity of Implementation proposed by Century et al. (2010). According to this framework, critical components of programme implementation and service delivery are identified through the examination of written programme records and conducting interviews with key stakeholders. They suggested four categories of critical components to guide assessment of the implementation of educational interventions:

1) Structural-Procedural: The basic organising components that indicate what was done based on what was expected to be done

2) Structural-Educative: The components reflecting what was structurally required (e.g. knowledge, skills, resources) for the participants to receive the intended educational benefits

3) Instructional-Pedagogical: The components relating to the facilitators' actions, behaviours and interactions with participants

4) Instructional- Student Engagement: The components relating to the participants' actions, behaviours and interactions during the intervention activity

These categories guided the formation of the observational checklist; their content was adapted according to critical components that the researcher identified through the stakeholder interviews, programme material, and preliminary, informal observations.

Findings

Extent of Implementation

The programme director claimed that in 2011 there were about 900 learners participating in the weekly clubs and about 450 in monthly activities. Observations of the activities indicated that the number of learners participating in the after school activities varies greatly, ranging between three and 30 with an average of about 10. For the in-class Living Classroom activities there were about 40 learners in each session, while for the holiday programme about 60 and 30 learners participated at each of the schools respectively. The necessarily voluntary nature of the programme may mean that learners who initially signed up have dropped out or that there is a high absenteeism rate. This problem will be discussed later in the section regarding the dose of the programme received. The principals of the two main schools both mentioned in their interviews that they wished the project had the capacity to work with more of their learners. One of them described how the parents ask why more of their children cannot be involved; "During our parents meetings whenever I report anything about Earthchild, they would all want to know why it is that Earthchild is working with only a few children."

Key stakeholders indicated, however, that the Earthchild Project, with its current staff size and funding, has reached its capacity in terms of the number of schools as well as the number of learners within these schools that it is able to serve. The three facilitators all mentioned that they felt their current workload is quite heavy, serving the two main schools and doing the limited intervention programme at eight more schools. Prospective expansion of the programme, in terms of services that it provides as well as the population it serves, was alluded to by the majority of programme stakeholders. This, however, does not seem imminent.

The programme director drew attention to the teacher retreats as one of the best received and most promising components of the Earthchild Project. Both the school principals also highlighted the teacher retreats as particularly beneficial to their staff; in their opinion it had been very well received by the staff, boosted their morale, reduced their stress, and was a great team building experience. As seen in the programme theory (Chapter 1), this is one area of the programme that is fulfilling a very definite need as identified through the Western Cape Education Department (WCED). The programme director indicated that following a meeting with a representative from the WCED, she believes there is the potential to get their support, financial and otherwise, for this initiative in particular. In light of this, it makes sense for the organisation to make expansion of the teacher retreats a priority.

Fidelity of Implementation

By looking critically at the quality of service delivery and comparing it to the elicited theory underlying the programme, one can better understand the proposed benefits that programme recipients are or are not receiving from the intervention (Rossi et al., 2004). As noted in the theory evaluation (Chapter 2), the Earthchild Project activities are relatively unstructured and lack a focused goal orientation; this makes it challenging to assess whether activities and lessons that are being given to the learners are consistent with the ultimate goals of the programme.

When activities are not systematically planned and too much discretion is left in their implementation, a programme is at risk of becoming unstandardised and providing varying service across the target population (Rossi et al.).

The Earthchild Project has developed in an unsystematic way; it is founded on stakeholders' implicit theories and has continued to grow and develop through their personal experiences and assumptions. When asked about her personal assessment of the programme implementation, the director admits:

> To be honest I didn't actually have a lot of expectations. I feel like I was quite young; I didn't actually know what I was doing and was making it up as we went along, so it's been quite an organic process.

Not having explicit expectations before programme implementation, makes a programme vulnerable to not having specific goals or a proper plan. With this unclear foundation just about any outcome can be interpreted as validating the success of the intervention.

Although the programme has a flexible and unstructured style of development, one of the facilitators explained that they do pilot the activities to assess whether they will be appropriate to incorporate into the programme. Observations indicated, however, that the term "pilot" is used very loosely. The process of incorporating activities into the programme is based on informal assessments made by the facilitators. Crutchfield and McLeod Grant (2008) identified the ability to adapt their programmes and respond appropriately to environmental changes as one of the critical factors of successful non-profit organisations. Too much adaptability may, however, threaten the structures and boundaries of the programme so it is suggested that after a phase of experimentation and innovation, an organisation conduct a formal evaluation; looking at the practical evidence of what works and why and modifying the programme and organisational plans accordingly. Although the Earthchild Project does perform basic monitoring, the programme director admitted that much of the data collected has remained raw. A proper analysis of the data has not been carried out and, thus, the information has not actually been practically utilized to make improvements to the intervention. This is an area where the programme could improve; there is no indication that they officially document their adaptations or substantiate their decisions about changes.

It was evident from observations of the learner activities that lesson plans are only loosely structured and implicit with little to no research backing up the content. Although observations suggested that facilitators were prepared for their lessons, it was sometimes not completely evident to the researcher as to how the lessons fit into the greater purpose and goals of the activity and the broader programme. The two main outcome orientations of the programme were identified in the theory evaluation as increasing healthy behaviours and wellness and increasing ecological awareness and pro-environmental behaviours among participating learners. Observation of the activities suggested, however, that the lessons were not always clearly orientated towards these outcomes. The holiday programme was an evident example this. The researcher observed that the content of many of the activities offered at the holiday programme was not structured specifically towards wellness or environmental education but

were offered merely for convenience purposes. A great deal of time in the activities observed was spent on singing and playing ice-breaker games. These activities could support some of the general outcome goals identified for the programme, including giving learners a more positive outlook on life and building meaningful relationships, but are not directly aimed at the Project's primary outcomes.

Observations suggested that there was little structure regarding the actual activity content. This is unfortunate, as planning that is not purposeful and structured towards the ultimate goals of the programme activity, puts the fidelity of the intervention at risk. In the interviews, many of the stakeholders talked about the Earthchild Project "curriculum" and the "syllabus". For example one said, "I think certain parts of the curriculum that they teach are applicable to everyone", implying a certain degree of structured learning. In reality, however, observations revealed that the lessons are created by facilitators, more or less, as they go along with little properly researched and long-term content planning. Insufficient consistency and structure makes it impossible to evaluate fidelity and if the programme does eventually want to be recognised and approved by the WCED, as some of the stakeholders suggested, they should incorporate more purposeful and academically-inclined structure within the activities.

The Institute of Educational Sciences (IES), which provides best practice guides on educational related issues based on available research and expertise, offered five key recommendations for improving the academic outcomes of out-of-school time programmes (Beckett et al., 2009). Firstly, they suggested designing the programme to tie in academically with the school programme. The Earthchild Project may benefit learners more if the staff got a better understanding of what learners were learning at school and tried to tie the topics in to one another. A few of the staff mentioned wanting the teachers to incorporate more of what they do into the classrooms; perhaps the programme could reciprocate by integrating some of the school curriculum into what they do so that they are also benefiting the learners academically.

The second suggestion follows on from the first, stipulating that if a programme does incorporate an academic component, stakeholders should ensure that the programme is appropriately designed to recruit and engage the target population, especially when participation is voluntary (Beckett et al., 2009). Observations suggest that currently, the programme attracts a variety of participants (see more about this in the reach section that follows); if they should want to integrate a slightly stronger academic focus (as was suggested earlier in this paper), they need to ensure that the majority of learners will still be motivated to participate.

The third suggestion is to give individual attention to the learners and adapt activity content and structure responsively to their needs (Beckett et al., 2009). It was evident in the programme theory that the activities and their content are very flexible and adapt according to the facilitators' personal judgements, implying good adaptability to learners' needs. The IES (Beckett et al.), however, recommended a more formal approach to adaptation, where learners' needs are assessed through questionnaires, purposeful observation, and interviews. One of the staff members explained that part of her job is to investigate how the participants are experiencing the programme. She said:

> I actually have to go into the classes and find out how the class is doing, how the project is doing, how our volunteers are doing, what impact it has on the kids, are they still happy, are they not, is the system working with what we are doing

This is a good beginning but there needs to be a more formal system of reporting the findings and deciding on and applying the appropriate changes.

The fourth suggestion is to provide an engaging learning experience that is "interactive, hands on, learner directed, and related to the real world, while remaining grounded in academic learning goals" (Beckett et al., 2009, p. 29). The Earthchild activities have a strong experiential learning orientation, which adheres to the first part of the recommendation. Observations verified that the activities were highly interactive and practical and that the learners were, on the whole, interested and engaged with the activities. The programme could, however, attempt to develop academic learning goals to guide the activities.

The last suggestion relates to monitoring and evaluation, specifying that the programme's performance should be constantly assessed and improved accordingly (Beckett et al., 2009). As stated in the organizational plan, the project used an external consultant and development organization to improve their organizational functioning. The consultancy helped them to establish a basic monitoring and evaluation function using feedback forms to be completed by facilitators. In the beginning of this evaluation, however, the programme director admitted that nothing concrete was really being done with the data that was collected and observation further revealed that the completion and filing of these documents was inconsistent and unsystematic. So although the foundation for this tool is evident, the Earthchild Project needs to make an asserted effort to better engage with the function in order to be appropriately improving their service.

Despite the general lack of goal-orientated structure, observations indicated, in the researcher's opinion, that the lessons are interesting. The learners in the main engaged with and enjoyed the activities, demonstrated by their voluntary involvement in tasks and eagerness to answer questions and give opinions. The facilitators interacted confidently and caringly with the learners, demonstrated by, for example, how they tactfully urged each of the learners to share their opinions with the group, helped them with tasks when needed and encouraged but did not pressurize them to share personal issues. The programme theory evaluation (Chapter 2) highlights the facilitators and their interaction with the learners as an important aspect of the intervention with expected outcomes such as building positive relationships and gaining a positive outlook on life. The researcher observed that there is positive interaction between the learners and facilitators; their behaviour indicated that most of the learners had a bond with their leading facilitator and trusted them, for example, many of the learners would hug the facilitators, talk to them about personal issues and frequently tell them that they love them. Their respect is demonstrated by listening and paying heed to what the facilitators say, most of the time, and generally being obedient to their instructions.

In an interview, one of the donor representatives drew attention to potential problems with facilitators getting exceedingly personally involved with the learners, "It's a fine line, I think [the ECP founder and director] learnt early on that you can't help everyone and you can't get involved in everyone's issues." A facilitator disclosed

that one of her greatest challenges in working for the Earthchild Project has been drawing boundaries in terms of helping and supporting the learners; she explained that many of the learners trust the programme staff and begin to open up to them, making it difficult to not get personally involved. The staff members need to be cautious about getting too involved with individual learners as this could distract from the main goals and objectives for the intervention. In the interviews with the staff, they indicated that they are, however, aware of this risk and have begun referring learners on to the school social worker as a way of managing this problem.

The programme director described how their approach to teaching the learners is different from the schools and stressed that the facilitators do not discipline the learners by shouting and forcing them to do things but rather encouraging them to behave well from a positive approach, teaching them about values and the rewards of being good. This approach is consistent with the values that the programme espouses and tries to instil in the learners but does not always seem to work from a disciplinary point of view, in the short term at least, and especially in the in-class initiatives where learners do not actually sign up to participate. It was observed that some of the learners were sometimes not attentive to the activity being presented. This was especially noticeable in some of the yoga lessons, where there were a number of learners who were not engaged with the activity and were sometimes found to be busy doing other things, like playing with their friend or daydreaming. Benefits for such learners are minimized since one could see that some of the facilitators and volunteers got frustrated and mostly ended up ignoring the inattentive learners. In this way, the programme assumes that the learners are mature enough to choose to be attentive and want to learn, which is not a realistic expectation for many primary school learners. Alternative techniques could be researched that are still consistent with the Earthchild philosophy to keep inattentive learners engaged to ensure all participants are receiving the maximum intervention benefits.

The volunteers are given a great deal of freedom and little instruction from programme staff regarding the activity content; this has resulted in a lack of consistency. For instance, observations from three different yoga sessions given by different volunteers revealed that relatively different things were being done with the learners. One had a greater focus on the physical exercise, another involved storytelling, while the third incorporated singing and chanting. Because of the unstructured nature of the programme, the stakeholders do not seem to find such inconsistencies problematic. A possible solution to this would be more training and workshops for the volunteers; the programme director and one of the employees who is responsible for managing and supporting volunteers, both claimed that the project provides the necessary training for the volunteers but there was little evidence of this during the observation period.

Programme Delivery

It was noted a number of times, during the observation period, that facilitators or volunteers were unable to conduct their activity due to various circumstances, including being away, being ill, and being on vacation. In most of these instances, the learners joined another activity group that was running in the same time slot; for example, the arts and crafts club had to join the healthy tuck shop club and the gardening club had to join the worm-farming club. The facilitators noted that during such sessions, the guest learners and their regular learners were not as responsive

and attentive as usual. It was apparent that both groups did not enjoy the situation; for the guests, having to participate in an activity that they did not sign up for with a new facilitator and for the regular learners, having to include the other group of learners who they did not know into their group. These lessons seemed less productive in terms of activity content since facilitators had to spend more time on name games and ice-breakers to introduce the learners to one another.

When volunteers cancelled or were away for a period of time, the activities that they conduct were mostly cancelled. This occurred a number of times during the observation period for yoga, which is mostly run by volunteers. The programme director admitted that volunteers are naturally less committed, posing a threat to the reliable implementation of activities. She explained:

> A challenge with volunteers is that what we need from them – at least from those who do the weekly extra-murals or monthly things – is a certain level of commitment…it's tricky because it's difficult to demand but on the other hand they need to be committed for the kids' sakes if they're doing an extra-mural. And they've often kind of left us hanging if there's other work.

Incomplete attendance records made it impossible to quantify the levels of learner absenteeism for the programme activities but observation and speaking with the facilitators indicated that absenteeism was relatively high. Apart from being sick, some of the learners have other after-school commitments, such as sport, choir, or extra lessons for tests or exams, that sometimes interfere with them being able to attend all the activity sessions. As mentioned in the theory evaluation, attendance to the extra-mural activities is completely voluntary; this inevitably leads to learners being exposed inconsistently to the intervention, which in turn leads to the learners not benefiting as much as expected or intended from the intervention. For the in-class activities, like the Living Classroom initiative, this is, however, not a problem since learners are compelled to participate as a part of their school day.

School logistics is another significant factor that inhibits fidelity of implementation. The programme director says that "it has sometimes been frustrating and limiting working within the current school system". Later she elaborates that a combination of the school system and teachers has been one of the major external challenges in running the programme; "So because of the nature of the current education system, the types of people in roles of teachers and the kinds of demands that they have and just the whole system, it has sometimes made it challenging to do what we do."

One of the facilitators highlighted school logistics as a major challenge in her work; she claimed that "It's a challenge when the schools are chaotic; the first week is always terrible so you get nothing done and the time you have at the schools is so short, so you don't get a lot of stuff done." On one occasion when the researcher had arranged to observe a hike, the activity had to be cancelled at the last minute due to, as the facilitator explained "a miscommunication", in which the majority of learners had not received the message that the hike would take place on that date and subsequently did not arrive. It was unclear, however, whether the miscommunication was a result of the school or the facilitator's organisation. On another occasion, during the observation period, a container

gardening session that forms part of the Living Classrooms initiative was postponed a number of times. The main problem, as the facilitator explained, was miscommunications between the school management staff, who played a role in logistically coordinating the activity, and the teachers, who were expected to implement the activity. This instance highlighted the major problem with relying on school personnel for the implementation of activities. Gaining the support of the school's teachers and principal is necessary for the effective functioning of a school-based, out-of-school time programme but school staff have their own agendas and priorities. It is ultimately the activity coordinators' responsibility to ensure that the programme is tailored to the realities of the school environment and that effective communication is maintained between all relevant parties (Beckett et al., 2009).

Besides from generally poor administration and organisation at the schools, other circumstances related to, but not within the control of the schools, also sometimes make it difficult to run the activities consistently and regularly. Observations revealed that religious and public holidays, as one might expect, interfere with activity implementation; on a few occasions other circumstances also meant the activities had to be cancelled, these included the death of a teacher, teacher meetings, and other random events that cause the school to close early. The programme director remembered how the teacher strikes in 2010 that lasted almost a month made it impossible to continue their programme activities during that time.

This section identified a considerable number of barriers, both internal and external to the organisation, that impede successful implementation. These are influential factors that need to be strategically considered and managed. In a process evaluation of school-based wellness centres in California, USA, Guerra and Williams (2003) noted how some problems relating to the implementation of projects in school environments are "almost unavoidable" (p. 484) but suggested that programmes need to find innovative ways of dealing with the particular circumstances. There is little evidence that at this stage the Earthchild Project has systematically acknowledged or attempted to address the above mentioned barriers. Actively trying to find solutions to barriers to implementation could be valuable in increasing the dosage of the intervention delivered.

Dosage

Dosage refers to the overall quantity and quality of intervention units delivered by the programme, and received by the participants (Saunders et al., 2005). Baranowski and Stables (2000) suggested that the dosage delivered is a composite of the extent and the fidelity of implementation, where consideration is given to factors that have inhibited the programme being implemented as it was designed. Extent and fidelity of implementation were discussed above. Regarding the dosage received by participants, the participants' exposure to and engagement with the intervention as well as their satisfaction with the programme is relevant.

The majority of learners were observed to engage actively with the experiential activities presented by the programme, for instance making their own container garden, but were notably less interested in the more academically inclined learning areas, for instance explanations and facts. Being an experiential education

intervention, the programme does focus more on the experiential learning component, so learners were engaged for most of the session.

Reach

Evaluating the reach of a programme means understanding the extent to which the target population is contacted by or is participating in the programme (Baranowski & Stables, 2000; Saunders et al., 2005). This involves assessing the coverage and bias of the service utilization; "coverage refers to the extent to which participation by the target population achieves the levels specified in the programme design, bias is the degree to which some subgroups participate in greater proportions than others" (Rossi et al., 2004, p. 183).

Teachers. Although learners are the primary target population for the intervention, they do also target the teachers; mainly for them to become programme ambassadors and implementers themselves or to at least have some influence over their learners. The literature on school-based interventions aimed at learners emphasizes the importance of involving teachers as much as possible in the programme to act as a channel to better understand the learners' needs and gain their support for the programme (Beckett et al., 2009; Draper et al., 2010; Guerra & Williams, 2003).

In an evaluation of HealthKick, a healthy eating and exercise intervention for primary schools that was piloted in disadvantaged areas of Cape Town, South Africa, Draper et al. (2010) identified the lack of teacher support and involvement as a significant barrier to the successful implementation of the programme. The study reiterated the problem of developing the necessary capacity from within the school staff. One solution offered by these evaluators is to find the right balance between prescribing what the teachers have to do in the programme and giving them the freedom to decide on their own approach. The solution that the Earthchild Project proposes is that the programme should not rely on the teachers to put the intervention into effect but to employ a permanent, school-based facilitator.

The programme founder emphasized that the initial concept for the programme was developed recognising that, from her experiences of working in schools, teachers do not have the time and energy to maintain the initiatives that NGOs implemented in schools, ultimately leading to the failure of the intervention. The idea of a permanent facilitator and volunteers who comes in to organise, run and manage regular activities, thus, forms the foundation of the programme's plan for its sustainability.

In the interviews with the programme stakeholders, however, a strong emphasis on teacher involvement emerged, with some even mentioning the possibility of training teachers to carry the intervention forward in the future. Two of the staff members (SM5 and SM4) discussed this in the focus group in reference to the organisation's goals:

> SM5: I think starting with the teachers would really help. It would really help to teach the teachers these things and they could spread it.

SM4: So I suppose that's a long term goal to get the teachers to teach it.

SM5: Ja. To actually get Earthchild ethos into the school through the teachers and then we'd really spread it.

These two different viewpoints make their expectations regarding the teachers' involvement in implementation confusing.

One of the donor representatives explained that they plan to focus on the teacher retreats, where they hope to get the teachers' buy-in on a personal and professional level. In this way, they expect that the Earthchild knowledge and skills will be transferred to their learners. This assumption is consistent with Draper et al.'s (2010) findings that "the process of recruiting, training and assisting teachers needs to be empowering and one that builds capacity and develops confidence in their ability to adopt new skills and roles within the school environment and in their community" (p. 19).

The current teacher support for the initiative varies. One of the school principals mentioned that some of the more religious teachers have complained to her about the yoga, saying that it conflicted with the school's religious views and beliefs. A facilitator pointed out that some of the teachers see the in-class activities that they run–such as the Living Classroom initiative or the yoga–merely as an opportunity to be relieved of duty and support the programme for that reason. From observations of the classroom activities and talking to some of the teachers, it was evident that many of them do appreciate that they get the time off to do their own thing while the facilitators or volunteers occupy the learners during this time. The programme director reiterated, however, that this is not the actual point of the intervention and wants to motivate these teachers to get involved on a deeper level so that, ultimately, they will integrate the concepts into their teachings regularly. The stakeholder interviews and observations indicated that a few of the teachers are, however, actively engaging and supporting the programme. Observations suggested that the support of the class teacher within the actual implementation of the activities, especially the in-class time initiatives, is highly beneficial, in terms of increasing the learners' discipline and engagement with the activities.

In the service utilisation plan (Chapter 2), it was noted that since the programme and facilitators have become more established in the school the recruitment and communication system with the teachers has become less formal. One facilitator maintained that at this stage all teachers know about what they are doing and she, thus, generally waits for teachers to indicate their interest and demonstrate a commitment to the programme. Observations suggested that it is mostly the same teachers who are being involved in the retreats, workshops, and Living Classrooms. In this case, it is probable that most of the teachers involved were already inclined towards the principles and values that the programme espouses. It is important for the programme to have the appropriate structural and organisational arrangements to facilitate maximum participation by the target population (Rossi et al., 2004). To increase the coverage of the programme and reduce its bias, the programme could focus on actively attracting and recruiting teachers who have had minimal engagement with the programme.

Learners. The learners voluntarily sign up to be part of the Earthchild Project, committing to attend the club/s weekly or monthly (depending on the type of activity offered) for a year. Although unavoidable, the voluntary

nature of these programme activities could lead to a bias in the type of population engaging in the programme compared to the entire target population; the researcher suspected that learners who are inclined towards healthier and environmentally-friendly behaviour are more likely to be attracted to the programme. In the interviews the stakeholders indicated that they believe a variety of learners were actually engaging in the programme for various different reasons. One of the donor representatives recalled that on a visit to the holiday programme at one of the schools he noticed that there were some learners that were "naughty" and "mischievous" and he was fascinated that they were actually there by choice. The director responded that, from her experiences in the schools, she believed a wide variety of learners are participating. She suggested that because of the range of different activities they offer and the different facilitators that run them, they attract different groups of learners.

The fact that a variety of learners are believed to participate was explained during the focus group with the staff members when they are asked about the reasons they think learners join the programme. Diverse reasons are proposed but the facilitators seemed to agree on some of the main reasons. One was that there is not much for the children in these communities to do or be involved in after school so the Earthchild Project activities offer them something to do. Stakeholders also believe that learners join because it gives them a sense of belonging and a group identity, implying that not only the learners who are already interested in health and ecology will join but a more varied group of learners. The staff members all believed that there was something different about the learners who signed up for the programme, as if they were special in some way; they suggested that these learners were perhaps more inclined towards leadership, that they wanted something more out of life and that they sought opportunities to grow and develop. The programme director expanded:

> I definitely think that because it's voluntary, the types of children that join are often children that have something in themselves, like I'd almost say a certain level of ambition. Because they want to learn, they want to be part of something that will expand their experiences.

Observation of the activity groups confirmed that certain learners do seem to be drawn to the programme and many of the same learners are involved in multiple activities offered by the programme, for example the Living Classrooms, the after-school activities, and the holiday programme. As with the teachers, it may be valuable for the programme to develop a plan to engage learners who have not shown interest in the activities offered. Beckett et al. (2009) emphasized the importance of promoting to and attracting a variety of participants for out-of-school time programmes and suggest that developing a short survey for learners and their parents in order to gauge their needs and preferences can be helpful in adapting services and recruitment strategies appropriately.

The Living Classroom initiative is the in-class-time component of the programme therefore it is up to the teachers as to whether they want to involve their class; learners are thereafter obligated to participate in the activities as part of their school day. This promotes greater coverage and reduces the possibility of bias for learners involved in the programme; integrating the activities and lessons into class-time is an effective way to ensure a greater number and wider variety of the target population are engaging with the programme. One of the newsletters proclaimed that they had set up 50 container gardens (one of the Living Classroom activities) in 16

classes at seven different schools in that term, engaging learners from Grades 1 to 7. One of the donor representatives suggested that the more limited but further reaching Living Classrooms approach is more aligned to what they are want in terms of increasing coverage.

There is a core group of the older, Grade 8 and 9 girls from one of the schools that are optimally engaged with the programme; they participate in many of the activities and have even started to assist in running and facilitating some activities, for example the holiday programme and the yoga. These are the learners for whom the young women's group was created; 12 girls were chosen, as one newsletter explains "for the unique potential that each displayed" and offered the opportunity to be part of this youth development programme. The programme has purposefully taken these girls to further develop their talents and give them better opportunities.

One important issue that was raised in the focus group with the programme staff was that many of the staff members felt that there may be more girls than boys participating in the programme. Although no formal record has been kept of the participant demographics, observations did suggest that on average more girls than boys were participating. The programme director expressed her desire for there to be a shift in this regard and felt that the main reason for the predominance of girls was that all the staff and the large majority of volunteers were female. Most of the activities offered–for example, the yoga, worm-farming, arts and crafts, healthy tuck shop, and obviously the young women's group–are more female orientated and naturally attract more girls. The facilitator of the hiking club claimed to have an even balance of girls and boys in that activity and explained that it is "because boys love challenging stuff, they love getting physical.'" The gardening club facilitator stated that in the one school there is a majority of boys while in the other school only two boys are part of this club. As detailed in the programme theory (Chapter 2), a male volunteer has formed a Tai Chi group at one of the schools, which is exclusively for boys. Research on after-school programmes in disadvantaged areas found the type of activities offered to be a critical factor in boys' engagement with a programme and, hence, the quality of benefits that they received (Roffman et al., 2001). Given the need and the potential success that outdoor education initiatives and after-school type programmes can have with boys (Festeu & Humberstone, 2006; McLeod & Allen-Craig, 2004), the programme should consider making an increased effort to target boy learners to participate, adapting the activities as necessary to attract them to the intervention.

Yoga has been the most controversial of the Earthchild Project activities because of the spiritual connotations and misperceptions that it is part of Hinduism. Some of the learners are forbidden by their parents to participate; as one of the facilitators explained:

> I've got lots of kids that want to do yoga but their parents don't understand yoga, they feel like yoga is this *thing*. And church, the religion plays a big role in why they won't join from what I've noticed.

In instances where yoga is given in class-time some of the learners have to sit out and do homework due to their parent's opposition to the activity. The one facilitator asserted, however, that due to the publicity that yoga and the Earthchild Project are getting, which clarifies that both have no religious associations, some of the parents who were opposed to the activity are now allowing their children to participate.

Programme Support Functions and Operational Issues

Scheirer (1996) proposed a useful framework for practically evaluating the organisational underpinnings of programme implementation. The framework guides the assessment of 11 fundamental components (1996, p. 66), eight of which are relevant to this evaluation and are used to guide the assessment of the organisation's support functions. These include: (1) vision and goals; (2) timetable and scope of operations; (3) leadership; (4) staffing; (5) funding and resources; (6) administrative processes; (7) communications; and (8) relationships with the environment. The template helps to systematically organise and analyse data on the complex functioning of organisation and is particularly valuable in formative evaluations since it successfully identifies programme weaknesses. The performance of the key organisational activities that were described in the programme theory (Chapter 2) is examined in order to identify potential operational issues.

Vision and goals. The goals of the programme related to outcomes seemed, from the interviews and focus group with stakeholders, to be unclear. The donor representatives were especially uncertain of the goals; there was a lot of hesitation and deliberating when confronted with the question of what they believed the goals of the programme to be. When they eventually answered, they only really addressed organisational goals and failed to mention outcome goals. One representative confessed, "Um, ja, am I aware of their long- and short-term goals? I am I suppose but maybe not as much as I'd hoped."

The outcome goals mentioned by the facilitators were personal and related principally to their specific activities and the learners they worked with rather than the programme as a whole. The website (www.earthchildproject.org) and programme documentation offer more explicit vision statements–for example, "Earthchild Project aims to nurture and develop a new generation of conscious, confident and responsible earth children" and "Through increasing consciousness, we will co-create this sense of Ubuntu"–but these are broad, long-term, and lack the necessary specificity. In order to be relevant and meaningful, programme goals should reflect realistic and practically attainable outcomes that the programme endeavours to achieve (Rossi et al., 2004). The programme theory evaluation (Chapter 2) explicated some of the programme goals; the organisation should continue to reassess and develop their outcome goals.

The organisational goals and objectives, on the other hand, have been systematically developed and documented with the assistance of an external programme development consultancy. They are clearly articulated and achievable. The staff members should continue to make close reference to this document and should perhaps be held accountable for their successful attainment in some way.

Timetable and scope of operations. This component relates to the organisation's stage of establishment and growth and whether their activities appropriately reflect that stage (Scheirer, 1996). The programme has been operating for over four years and most of the stakeholders considered it to be in a more mature stage; the programme director explained:

> I think in terms of the organization, where I feel it is, is that it's kind of just recently, maybe last year, started moving out of the piloting stage and is starting to feel a bit more established in like our planning and our organizational stuff and roles and responsibilities being clearer.

However, two of the donor representatives, in particular, considered the programme to still be in a foundational, more experimental stage of implementation.

As was pointed out earlier, the programme is currently operating at its maximum capacity in terms of funding and staff. Expansion was a subject that aroused considerably different responses among the Earthchild Project stakeholders. Four of the five donor representatives interviewed were positive and confident about the expansion of the programme into more schools. They recognised, however, that there are significant barriers and problems in expanding this type of programme. The programme director agreed that in the beginning they wanted to get the project into as many schools and include as many learners as possible. They have subsequently realised, however, that extensive expansion could threaten the quality of the intervention, since the Earthchild Project sees the personal, one-on-one interaction with the learners as beneficial to the learners. In her words:

> I think it [expansion] naturally is happening but very slowly and very organically. And another thing – just from what I've often seen in the NGO world or not even just in the NGO sector – when things get too big, then a lot of time and energy needs to be spent in just managing this massive ship, whereas I think because we are small, it actually improves the quality of the intervention and the effectiveness of the team.

A representative of one of the founding funders, who is also one of the directors of the organisation, reflected this same view; emphasizing that although they want the programme to touch as many learners as possible, they recognise that maintaining the quality of the programme is more important and would be compromised if the project tried to expand beyond its current capacity.

Leadership. It was established in the programme theory that the Earthchild Project has an unstructured style of management. Lewis (2007) explained that the loose management approach, adopted by many NGOs, often leads to organisational weaknesses. Although the role of a "chief executive" (Lewis, p. 195) is important, a participatory style of management, where staff members and volunteers are given the agency to exercise leadership and participate in organisational processes and decision-making, has been found to be most effective. Crutchfield and McLeod Grant's (2008) research on high-impact NGOs revealed similar findings. They indicated that a shared leadership style, where core staff members are empowered with the appropriate authority and accountability, is typical of successful organisations. These authors (Crutchfield & McLeod Grant; Lewis) demonstrate that there is a fine line between efficient management and sufficient staff agency. The Earthchild Project gives each staff member almost complete agency over their roles and responsibilities within the organisation with too little structured and centralised management.

Staffing. The recruitment and retention of staff with appropriate skills is often problematic for out-of-school time type programmes because of the demanding nature of the work and the generally low remuneration (Geiger &

Britsch, 2003). The facilitators and their interaction with the learners are believed to be a critical component of the intervention, not only as activity implementers but also as mechanisms of change for achieving outcomes, such as building meaningful relationships. It is, therefore, essential for Earthchild Project facilitators to have the appropriate characteristics as well as the necessary skills.

In the interviews, all the staff expressed high job satisfaction. They believe that what they are doing is making a difference and have a passion about what they are doing. Regarding the work environment, one of the staff members said:

> It's not stressful at all, our work, we never stress...It's a stress-free environment and we try and give that to the kids as well. You know for them to learn to not stress. It's a different approach but, I mean, I've only worked with them for about a year and you can see the difference.

The positivity and enthusiasm that the staff members have towards their job and working environment is important because it supports low turnover.

Staff of out-of-school time programmes frequently experience burn-out as a result of having to incessantly deal with limited resources, learners with high needs, and a general lack of support (Geiger & Britsch, 2003). One of the facilitators admitted that she does occasionally feel a lack of support within her role and identified this as one of the main challenges in her role:

> R: What would you say are the challenging areas of your position?
>
> SM2: Most important would be being alone in the Retreat area; having to do all of it and not having someone to just bounce ideas off of and just you know correspond with. Cause I'm in Retreat four or five days a week sometimes. I'm all alone and I have to manage all the schools and I have to do everything

The other two facilitators, in contrast, did not feel a lack of support. This may be because they work more closely together, mainly in the Khayelitsha area, while the previously mentioned facilitator works mostly alone in the Retreat area.

The staff indicated that because their work requires a lot of personal input–positive energy, creativity, and innovation–workshops and training that motivates and inspires them are valuable. They all felt that they were given sufficient opportunities within the organisation for growth and development, both on a personal and professional level.

Funding and resources. As an NGO, the Earthchild Project relies on funders and fund-raising activities to support their work financially. As demonstrated in the programme theory (Chapter 2), they currently have a combination of corporate and non-corporate donors who provide relatively steady funds to support the functioning of the programme. All the donor representatives interviewed were, overall, extremely positive about the intervention, which suggests that they will continue to support the intervention in the long term. One of the major donor groups, however, specified that they only provide funds and support to an organisation for a limited period of

time, usually five years. The fact that this period is nearly over could be problematic for the sustainability of the programme and was recognised as such by the project director and one of the other donor representatives.

Funding was highlighted by the staff as a chief area of concern and the director emphasized that it is a priority for them at the moment to secure more funding. The programme is not very material intensive, with staff salaries being the biggest expense, so the funding does at least go a long way. The staff explained that they are always conscious of the shortage of funds and materials and find innovative ways to not spend or save money, for example, getting the learners to find old or broken things around the townships to use in the activities. This reduces the resources they have to buy and, they claimed, teaches the learners about creatively reusing what they may think of as junk. They suggested, however, that they could do more for the learners if they had a bigger budget to work with. Funding was indicated by stakeholders as one of the major barriers to expanding the programme.

One resource highlighted by the stakeholders as extremely valuable was the prefab classroom that was donated to them at one of the schools, which is used exclusively for the Earthchild Project activities. Having a classroom creates a base for the project and awareness of the programme among learners and teachers. The facilitator based at the other school explained how difficult it is running the programme without a dedicated classroom or space at the school where they can do the activities and store their equipment. They have to ask teachers if they can use their classrooms for the indoor activities and the facilitator said that some of their equipment has been stolen and vandalised because there is no place to lock it away. This is problematic and building a classroom at their other main school could be seen as a priority. The stakeholders indicated that funds for this are, however, not currently available.

NGOs are generally highly dependent on their environment for resources and funding. One of the practices found to be common to high-impact, non-profit organisations was harnessing the power of business to make their organisations more independent and sustainable (Crutchfield & McLeod Grant, 2008). The Earthchild Project did attempt to become more financially sustainable and independent by setting up a small worm-farming business. The venture did not do as well as expected, however, and although they still run it on the side, they no longer consider it a substantial income-generating activity. The programme also organises fundraising activities and events, for example yoga workshops, talks and dinners, to get in extra funds and raise awareness about the project.

In terms of reporting and accountability, there has been pressure from some of the more corporate donors to develop a formal financial planning, recording, and reporting system. Different donors request different forms of reporting to be submitted by the programme; some do not require accountability records, while the corporate donors require financial breakdowns of what their contribution was used for. One of the donors explained that they have had some difficulty with the reporting that the Earthchild Project has provided in the past and has consequently given them some structured guidelines in order to improve this function:

> We fund another institution that helps learners with Maths and Science and when they give a report back it says; 700 learners came to us at the beginning of the year with this grade, at the end of the

> year we'd increased their grade by 5%. So we go, "Wow, our money is working there. Let's do that." And then when Janna comes with her report-backs and is like, "Well we dig in the garden every Wednesday and then we have yoga and then we have, you know, story-telling." Our management goes, "What are we funding? What is happening here? Is there a return isn't there?" So we're trying to guide her in this regard.

The director has taken responsibility for the role of organising and managing the funding. She indicated, however, that she is challenged and sometimes frustrated by the position. She admitted that administration and office work is not her strong point or what she would ideally like to be doing within the organisation but felt at the moment best suited to fulfil these tasks, especially, as one of the donor representatives pointed out, in terms of selling the concept to prospective investors since she is the founder.

Organisational and administrative processes. Many NGOs struggle with organisational and administrative functions because they are typically action-orientated and focus on how they can help others practically through the service activities rather than their organisational structures and processes (Lewis, 2007). Additionally, many NGOs have resisted implementing formal structures and strict regulations, which they associate with negative capitalist principles. One of the Earthchild Project staff members who came from a more corporate background before working for NGOs expressed her frustration with the way these organisations function; "I wanted more structure. I wanted things to run according to a system, I wanted things to run according to a manual cause that is where I came from and I felt like that has worked well." The director stressed that they do recognise the importance of organisational planning and administration and said that they have taken practical steps and do make a concerted effort to improve this foundational area of the programme. She claimed that there had been considerable improvements but described it as "a work in progress".

All of the staff members admitted that administration has been a particularly weak point for the organisation and that they have struggled with this function. Each staff member is expected to do their own administrative work but three out of the four staff members had no previous experience with administration. An external consultancy was employed to assist with training the staff to perform their administrative functions more efficiently. All the staff members said that they found this extremely helpful and beneficial to the organisation and claim that there have been significant improvements in this regard.

In the interviews the staff members indicated that they were relatively up to date with their administrative work but examination of the administrative files revealed considerable disorder. The majority of the documents, for example the attendance records and feedback forms, were not dated and many were incomplete, the files were not labelled or stored in a logical manner; as a result it was near impossible for the evaluator to make sense of and utilize these records. It is problematic to use unreliable and inconsistent records for making critical decisions about the organisation and significantly compromises the monitoring results (Rossi et al., 2004). It is important for the programme to develop a more systematic approach to record keeping and filing so that they can use this

information effectively and it can serve them appropriately in future stages of the organisation's development (Scheirer, 1996).

Communications. Clear and open internal communications between staff members as well as regular and positive communications with the relevant external stakeholders is important in supporting efficient programme operation (Geiger & Britsch, 2003). As a small, tight-knit team communication between the staff members is generally very good and mostly done on an informal level. Since they are based at different locations, however, the more formal meeting that takes place every Friday was identified by the staff as important in terms of support and keeping them connected to the team.

The programme uses a number of formal and informal ways to keep funders, sponsors, and supporters updated, including through email newsletters, social networking, and personal communications. The donor representatives all expressed that they find their communication with project to be excellent. One of them said, "They definitely keep us updated, beautifully so. There's also the personal interaction, which is great…And I love knowing what's going on to see if there's any way in which we can add or promote or anything."

It is critical, as well as highly beneficial, for an out-of-school time programme to have close communication with school educators and principals (Geiger & Britsch, 2003). In the interviews with the principals of the two main schools, they both claimed to have very good communication and relations with the Earthchild Project facilitators and staff. As mentioned previously, the project's communication with the teachers is primarily informal since they know most of them relatively well. They do occasionally organise more formal meetings with the teachers but these are infrequent and irregular. A more formal and thorough communication plan could be beneficial in getting more teachers involved and could also help in appropriately linking the after-school activities to aspects of the in-class syllabus.

In terms of communication with parents, all the learners who participate in the extra-mural activities require signed consent forms from a parent or guardian that informs them about the programme. Subsequently, letters are sent to the parents informing them about events. One of the principals also mentioned that she reports about the programme at school parent meetings. It could be beneficial to involve the parents more in the programme; getting parents' support and buy-in for the values and lifestyle choices that the programme teaches to the learners could significantly improve the impact of the programme (Abrahams et al., 2011).

Relationships with the environment. When the Earthchild Project team first approached the principals of various schools in Khayelitsha to gain their support for the initiative and permission for the programme to be run at their school, they experienced a lot of resistance. A facilitator explained that many of principals they approached did not fully understand the concept because it is foreign to "Xhosa culture" and they often do not want to take the risk of a programme's failure being associated with their school.

The facilitators indicated that gradually, however, as principals and teachers have seen the type of things the programme is doing in the two models schools, other schools have come on board with the concept and some of them have approached the project to start something in their schools. The principal of one of the schools described her experience of how the programme has gained popularity in that community, indicating that the programme currently has a good reputation within the community:

> There are no less than four to six schools that also want to do what we are doing here. You know when they [the Earthchild Project] started, people didn't understand the concept but as they were doing things here at school and people were seeing that there is a difference then they started saying please come to our schools.

In terms of gaining support outside the community, Crutchfield and McLeod Grant (2008) suggested that in order to harness the power of collective action and mobilize greater social change, NGOs should encourage people to engage meaningfully with the initiative, inspiring them to become advocates of the programme. This is something the Earthchild Project does extremely well; most of the programme stakeholders and supporters, including donor representatives, volunteers, people from partner organisations and the general public, encountered during the evaluation were almost like evangelists for their cause and most of these people had volunteered, sporadically or consistently, during the holiday programmes, for activities, or helping with the organisational side of things.

Although the Earthchild Project website lists many partnering organisations, the programme director admitted that working with the partnership organisations "comes and goes a bit but it kind of just feels like it's natural" and explained that the nature of the relationships have changed substantially. One of the facilitators believed that they are less reliant on their partners now that they are more established. Both of the principals mentioned how bringing in partnering organisations to work at their school in conjunction with the Earthchild programme has been extremely advantageous. Since the programme currently has a limited capacity, they could still significantly influence the impact created in the schools within which they work by referring other NGOs and harnessing the power of other interventions. It could be beneficial for them to continue to actively network with other organisations and interventions in order to create maximum benefit for the programme participants.

Conclusion. This section of the process evaluation assessed eight components of Earthchild Projects internal functioning that supports the programme delivery. It is important, especially in a formative evaluation (Bamberger et al*.,* 2006), to understand the details of how an organisation functions in order to identify any possible weaknesses that may inhibit the programme from providing the intended services and benefits to the programme recipients as well as strengths that support the programme's success (Rossi et al. 2004). Humanitarian NGOs are increasingly being scrutinized with regards to the quality of their services as well as their internal management and organisation, which are believed to ultimately influence their performance and output (Hilhorst, 2002). NGOs need to ensure their functioning and strategies are just as efficient as competitive, for-profit businesses (Crutchfield & McLeod Grant, 2008). This section presented some suggestions of how the Earthchild Project could achieve more efficiency in its functioning.

CHAPTER FOUR: OUTCOME EVALUATION

In this chapter, a brief and modest assessment of the programme's main outcomes is presented. An outcome evaluation is generally more complicated to conduct than other types of evaluations but it was included here because of its potential to yield valuable information regarding the changes that the intervention could bring about (Chen, 2005). There are significant practical, ethical, and financial constraints in conducting a sufficiently rigorous evaluation within a real world setting; whenever possible, however, an evaluator should adapt research designs and methodologies in an attempt to give some idea of the impact of the programme (Bamberger et al., 2006). In this evaluation, the researcher saw the opportunity to collect outcomes data and, thus, included this research as initial, albeit limited, evidence of whether the programme's outcomes are being achieved. As a formative evaluation, the results are intended to guide appropriate improvements and do not attempt to establish accountability (Bamberger et al.). There are substantial design and methodological limitations to the study, which form a significant consideration when interpreting the results.

The fundamental intention of any social intervention is to produce positive changes and improve social conditions; a systematic evaluation of a programme's outcomes assesses whether the appropriate changes can be observed in the relevant population or social conditions (Rossi et al., 2004). An outcome evaluation attempts to establish whether the intervention is the cause of these changes. Demonstrating sufficiently strong results that rule out other possible extraneous factors and conditions with reasonable plausibility is, however, not easy (Babbie & Mouton, 2001). Rigorous outcome evaluations need to maintain strict scientific standards in order to infer the necessary causality and produce findings that are valid and credible (Rossi et al.). There is an inherent struggle in programme evaluation between adhering to social scientific methodology and the practical concerns of the programme and its stakeholders.

Pawson and Tilley (1997) argued that evaluation is fundamentally an applied form of research and should serve the practical needs of programme stakeholders. A focus on effectiveness, where a programme's outcomes are considered within a real-world setting, is often most suitable because the primary purpose is to generate findings that are useful to stakeholders and could perhaps inform necessary programme improvements (Chen, 2005). The context in which a programme operates, explicated in the theory and process evaluations, is of critical importance when attempting to understand the outcomes and should not be disregarded in evaluation. Pawson and Tilley (p. 104) urge evaluators "to stop thinking of programs as some kind of unitary happening which either does or doesn't work".

The outcome evaluation of the Earthchild Project looks briefly at whether the intervention outcomes are present in the programme recipients. Two main outcomes for the programme were identified in the programme theory and consequently form the focus of the outcome evaluation. One is to increase the health behaviour and wellbeing of the teachers and learners and the other to improve their environmental conservation attitudes and behaviours. The four central questions of the outcome evaluation are:

1) Do the learners who have participated in the programme have more pro-environmental attitudes and conservation behaviours than learners who have not?
2) Do the learners who have participated in the programme engage in healthier behaviours than learners who have not?
3) Do the learners who participate in the programme have greater subjective wellbeing than learners who have not?
4) In what ways have the teachers who have participated in the programme benefitted?

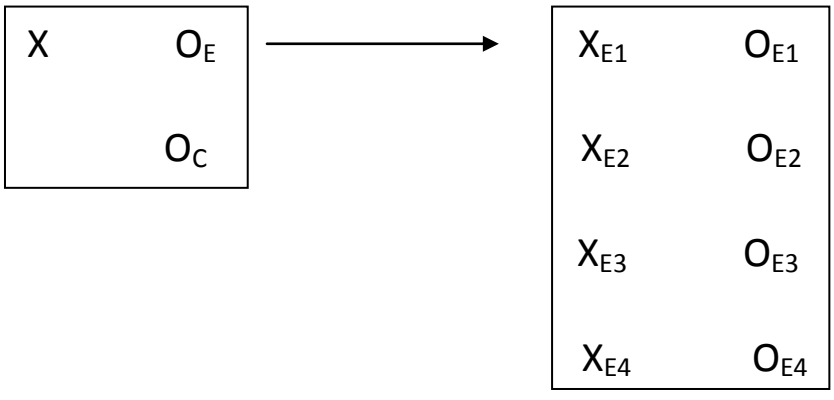
Method

Three noteworthy contextual limitations that prevented the application of a rigorous experimental design in evaluating the Earthchild Project are as follows: (1) the programme is voluntary and, thus, learners could not be randomly assigned to intervention and control groups; (2) the programme records were largely incomplete, which required the evaluator to rely largely on programme facilitators to recruit research participants; and (3) the evaluation timeframe, within the constraints of the programme's operating schedule, meant that a pre-test could not be administered.

Design

A post-test only with non-equivalent groups design was used for the evaluation of the learner outcomes (Cook & Campbell, 1979). Figure 7 illustrates the research design; a post-test in the form of a self-report questionnaire, was administered to the research participants. Participants who reportedly have participated in the programme (the experimental group) were compared to those who have not participated in the programme (the control group). The experimental group was further divided into four intervention dosage groups (*once a week, once a month, once a term*, and *once a year*) for a more detailed comparison.

Figure 7. Post-test Only with Non-Equivalent Groups Design Used for Learner Outcome Evaluation



Having no pre-test or baseline information with which post-test results can be compared presents a threat to the validity and adequacy of the findings (Bamberger et al., 2006). In real-world evaluations it is relatively common, however, for evaluators to be employed only after the project has already been implemented, which often makes it challenging to establish this baseline data, as was the case in this study. Evaluators typically seek out alternative ways and mixed methods to recreate such baselines (Bamberger et al.). In this study, the only possible baseline data on the participants was in the form of school records, which were inaccessible to the evaluator.

Participants

Convenience sampling was used for the learners' outcome evaluation. The programme facilitators identified and recruited programme participants who received the programme in different dosages as well as non-participants to complete the survey. All the research participants belonged to the two main schools in which the programme runs and were contacted through the programme facilitators. The learners ranged from Grades 5 to 7, since the facilitators and researcher believed that learners in the younger grades might have difficulty understanding the questionnaire. A total of 165 learners participated in the research; there were 132 participants in the experimental group, which included four intervention dosage groups–*once a week, once a month, once a term*, and *once a year*– and 33 participants in the control group who had never participated in the programme. A summary of the participants' pertinent demographics, including gender, school, and intervention dosage groups, is presented in Table 1.

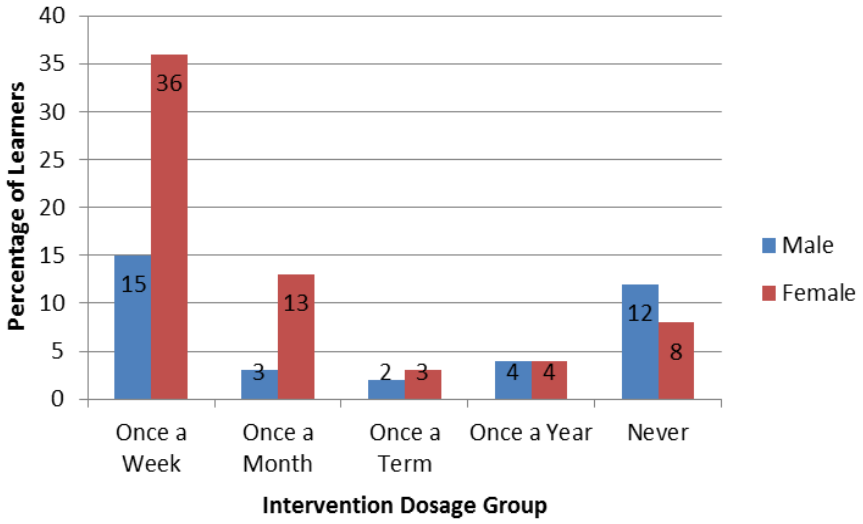
Table 1

Basic Demographics of Learner Participants

Variable	*N*	*Percentage (%)*
Gender		
Male	57	34.55
Female	102	61.82
Unknown	6	3.64
School		
School 1	118	71.52
School 2	47	28.48
Dosage		
Once a week	83	50.30
Once a month	26	15.76
Once a term	8	4.85
Once a year	15	9.09
Never	33	20.00

Figure 8 demonstrates the percentage of male and female learner participants within the various intervention dosage groups.

Figure 8. Percentage Male and Female Learner Participants per Intervention Dosage Group



The teachers were chosen to participate according to purposive sampling. The facilitators identified teachers who had been most involved in the programme and had participated in the retreats and/or workshops. These teachers were approach to complete the questionnaire. A total of eight teachers responded to the questionnaires and were used for analysis; all of them were female.

Data Collection Measures and Techniques

The outcomes theory for the Earthchild Project (see Chapter 2) revealed three main, measurable outcomes for learners:

1) Increasing healthy behaviours

2) Improving general well-being

3) Increasing pro-environmental attitudes and behaviours

A questionnaire (see Appendix F) was developed by the researcher to assess the three programme outcomes. Questions 11 to 28 address the environmental education aspect of the programme. The formation of the questions was guided by Rickinson's (2001) review of the research pertaining to the outcomes of environmental education for learners. In his review of over 100 journal articles he found six main areas of evidence that environmental learning had taken place in children. These included their environmental knowledge, environmental attitudes and behaviour, environmental learning outcomes, perceptions of nature, experiences of learning, and influences over adults. With consideration of these themes in the context of the Earthchild Project, four indicators of environmental education were used to develop the questions:

1) Environmental knowledge and awareness

2) Environmental attitudes

3) Environmental behaviours

4) Perceptions of nature.

These themes are consistent with the short-term and intermediate outcomes as identified in the activity logic models (see Chapter 2, outcomes theory). The researcher adapted and included appropriate questions from Leeming and Dwyer's (1995) environmental attitude and knowledge scale for children as well as from a scale devised by Musser and Malkus (1994), which measures school children's attitudes towards the environment, in the questionnaire.

Questions 29 to 36 relate to the learners' basic, practical health behaviours. The second last section, question 37 to 46 relate to well-being and was guided by Awartani, Whitman, and Gordan's (2008) research, which identified specific domains of wellness for measuring learner's subjective understanding of their wellbeing. The relevant domains included in the questionnaire are:

1) Physical well-being

2) Emotional well-being

3) Satisfying relationships

4) Confidence in capabilities

5) Pleasure and joy in learning

6) Inner strength and spirit

7) Sense of inter-connection with all life

8) Overall satisfaction with life.

These domains relate to the Earthchild Project short-term and intermediate outcomes (see Chapter 2, outcomes theory) and, thus, form the indicators on which the questions are based.

Since it was not possible for the researcher to randomly assign participants to the intervention and control groups, there was a risk that certain characteristics of the participants within the pre-existing intervention dosage groups would influence the results (Rosenthal & Rosnow, 2008). In other words, all the learners who had participated regularly in the programme could do so because of some shared characteristic that is not present in the learners who had not participated regularly in the programme; such characteristics would be covariates that confound the results related to the outcomes of the intervention. Confounding covariates have to be identified and controlled for in the analysis. Based on the theory and process evaluation findings, the researcher suspected that the learners' gender and school aptitude could be significant confounding covariates on the outcomes scale. Questions

four to ten were included to measure the learners' school aptitude; they are based on a questionnaire that measures learners' general attitudes and behaviour towards school and after-school activities (Geiger & Britsch, 2003).

The researcher obtained input from the Earthchild Project staff to improve the draft questionnaire; they gave suggestions, mostly regarding wording, to make it more appropriate for the learners. They suggested that the last question (47) regarding the learners' confidence in speaking English be included since they felt that this may be an indirect outcome of the programme for learners who are not first language English speakers.

The questionnaire is structured, giving the participants four Likert-scale type response options to choose from. The structure is based on a questionnaire that was developed by the Northwest Regional Educational Laboratory as an evaluation tool for out-of-school time programmes (Geiger & Britsch, 2003). External translators were employed to translate the questionnaire into Afrikaans and isiXhosa in order to accommodate the participants' home languages. Translation puts cross-cultural questionnaires at risk of creating inaccurate meaning (Rosenthal & Rosnow, 2008). The translated questionnaires were, thus, checked and appropriately corrected by independent, second-party translators. Two of the facilitators, fluent in Afrikaans and isiXhosa, also went through the final, translated questionnaires to check that the translated version was appropriate

The teacher questionnaire (see Appendix G) contains four broad questions to elicit the subjective experience of change they experienced as a result of the intervention. The questions were adapted from examples given by Davies and Dart (2005). The simple, open-ended questions allowed the teachers to elaborate on their experiences of change and elicit subjective narratives concerning the relevant outcomes of the intervention. All the questionnaires were presented in English on the assumption of the teachers' competence in the language.

Self-report data. Self-report techniques, such as the questionnaires used in this outcomes evaluation, are frequently used in research when it proves too difficult to obtain the data in other more direct ways (Bamberger et al., 2006). There are many concerns about self-report data; some that are relevant to this research include people's tendency to give answers influenced by their need for social approval, people's difficulty to look at themselves and their behaviour realistically, and the non-equivalence of personal ratings between different people (Rosenthal & Rosnow, 2008). In real-world evaluation, however, self-reporting is often a feasible method to collect data where otherwise it would not have been possible, due to practical, budgetary, and time constraints (Bamberger et al.). When a researcher considers participants to have adequate language skills and experience to report on their attitudes and behaviour then self-reports can be successfully used but data should be approached with some degree of scepticism (Bamberger et al.).

Procedure

The researcher first sought approval from the principals to conduct the questionnaires with some of the learners at their schools; both consented. The facilitators were extremely helpful in arranging times and venues as well as appropriate learners to complete the questionnaire. Some of the sessions were held during the school break time,

others during the after-school, Earthchild Project activity time, and sessions with two classes were held during school time (on arrangement with the teacher and principal). Information about the research and consent forms for their parents or guardians were given to the learners to take home. Each learner was also given an assent form to read and sign. The researcher supervised the survey administration, apart from one of the sessions when the researcher was unavailable and a competent facilitator was in charge of conducting and collecting the questionnaires. A programme facilitator or school teacher, fluent in the learners' home language, was also present at the sessions to assist the learners. The researcher/facilitator/teacher went through and explained the consent form and questions with learners in the appropriate language. Each questionnaire session lasted between of 20 and 40 minutes. The number of respondents in the group sessions ranged between three and 47 learners.

Consenting teachers were given their questionnaire to complete in their own time. They were given about a week to ensure they had sufficient time to think about the questions and give adequate answers.

Design Limitations

There are considerable limitations to this outcomes evaluation. The findings suggest a conservative estimate of the programme's effect and should be seen as a point of interest and an analytical tool that supports the formative nature of the evaluation rather than a means to establish accountability for the programme. The major limitations are listed below:

- The evaluation does not have the capacity to establish a causative link between the programme and its intended outcomes since the administration of a pre-test was not possible.
- There is a risk of a sampling bias since it was not possible to select the sample randomly, which could result in the sample not accurately reflecting the population.
- Convenience sampling resulted in substantially uneven sample sizes for the various intervention dosage groups, some of which were noticeably small.
- The questionnaires rely on accurate and honest self-reporting from the participants; the credibility of the data, thus, cannot be guaranteed.
- The validity of the questionnaire has not been formally tested but was compiled by the researcher and is based mainly on other research and common sense.

It is suggested that programme stakeholders use this outcomes section as a practical tool for the on-going measurement and monitoring of outcomes; they could consider the continued development and administration of similar questionnaires to learners at the beginning and end of their participation in the programme to determine improvements that participants have undergone and to give an understanding of which outcomes need attention.

Results for Learner Questionnaire

Response Scoring

The four pertinent variables–school aptitude, environmental attitudes and conservation behaviours, health behaviours, and wellness variables–were assessed on Likert-type scales; for each response option, a number was assigned representing the appropriate numerical value of that response in correspondence with the question. For example:

4. In the morning when you wake up, do you want to go to school?			
No, hardly ever	Sometimes	Most times	Yes, almost always
Score: 1	*2*	*3*	*4*

Although the individual responses on a Likert-type scale are inherently ordinal (Rosenthal and Rosnow, 2008), when they form part of a subsection and the response scores are summed together, the values form an interval scale and parametric tests, such as analysis of variance (ANOVA), can be confidently used to produce substantially credible findings (Norman, 2010).

Analysis of Outcome Variables

The computer statistics programme, SPSS, was used to analyse the data. The main objective of the analysis was to compare the mean differences in scores for learners who participated in the programme at the various dosage levels including a group who had not participated at all. Differences on the three outcomes scales as well as the overall outcome score were addressed. An analysis of covariance (ANCOVA) test was done to test for an effect through the comparison of the means of learners on five levels of the intervention dosage while taking into account two suspected covariates, gender and school aptitude (Rosenthal & Rosnow, 2008).

There is one independent variable – *participation in the Earthchild Project* – with five levels of the intervention dosage:

1) Once a week

2) Once a month

3) Once a term

4) Once a year

5) Never

The four dependent variables used in this analysis are:

1) Environmental Attitudes and Conservation Behaviour (EACB)

2) Health Behaviours (HB)

3) Wellness (W)

4) *Overall Earthchild Project (ECP) Outcomes* - which is cumulative of the scores on variables 1, 2, and 3?

The hypothesis for the study is: the higher the Earthchild Project dosage received by the learners, the more their attitudes and behaviours change in the desired direction on the four outcome variables. The researcher expected there to be an increase in the scores on the dependent variable scales as there was an increase in the dosage received by the learners as demonstrated by the various intervention groups. A repeated contrast post hoc test was used to analyse the initial ANCOVA results and test this hypothesis. A repeated contrast analysis is non-orthogonal and allows one to investigate overlapping or non-independent questions (Rosenthal & Rosnow, 2008).

Missing data. Missing data is a significant problem in social research and has to be dealt with appropriately in order that bias is not introduced into the statistical estimates (Rosenthal & Rosnow, 2008). For the learners' questionnaires, 1.6% of the questions were missing. No pattern in the missing data could be detected, suggesting that these responses were "missing at complete random" (MACR) for a number of possible reasons. Data is classified as MACR when the missingness is not related to the variables being investigated (Rosenthal & Rosnow). Listwise deletion, where cases with missing data are deleted, is not feasible in this instance since it would result in a significant loss of power in the study. Imputation, on the other hand, where statistical estimates are used to complete missing datasets, is appropriate here, and mean substitution, an imputation procedure where missing values are replaced with the mean value of the relevant variable, was used. Although this technique yields relatively unbiased estimates for MACR data, it should be noted that variability estimates are lowered (Rosenthal & Rosnow). By replacing missing values with the individual participants' mean scale score, however, the effect on the variance within the sample is minimized.

Data regarding gender was missing for six of the participants. Because mean substitution cannot be done on nominal data, listwise deletion was automatically used by the statistical programme (SPSS) for these cases. Listwise deletion yields unbiased results but causes a loss of power for the study (Rosenthal & Rosnow, 2008). In this instance the technique did not put the study at risk of losing significant power, however, as only a relatively small proportion of the sample size (3.64%) was deleted.

Outliers. Visual examination of the boxplot diagrams for the outcome variables (see Appendix H) revealed a number of outliers; three of the cases in particular were judged to be substantially inconsistent with the remainder of the dataset on more than one of the outcome variables. Outliers can indicate a data response or recording error occurred, skewing the statistical results (Rosenthal & Rosnow, 2008). The exclusion of outliers is a controversial aspect of any research, however, due to the fact that valuable information may lie in the deviation of outlying cases (Orr, Sackett, & Dubois, 1991) and deletion could create a bias in the central tendency of the dataset (Rosenthal & Rosnow). The three significantly outlying cases were, nevertheless, dropped for the final analysis.

A number of reasons justified this decision. Firstly, given the nature of the data collection tool, a self-report questionnaire, it is likely that respondents may have over- or underestimated their attitudes and behaviours in their responses. It is also possible that some respondents were not serious when answering, choosing a response set and

ticking that option for all of the questions. Consistent separation of a case from the majority of the other participants' responses across different variables could well indicate these situations. Secondly, the intervention dosage groups in which the problematic outliers were present – one from the *never* and two from the *once a week* groups – had substantial enough sample sizes so as not to create too great a bias. This is substantiated by the final point; an analysis performed prior to outlier deletion did not reveal significantly different results from the analysis following outlier deletion, suggesting their exclusion was in fact not particularly relevant in any case (Orr et al., 1991).

Descriptive Statistic Results

The descriptive statistics for the learner data are presented for each three outcomes as well as the overall outcome results, according to their summative scores, in Table 2.

Table 2

Descriptive Statistics for Intervention Dosage Groups on the Eathchild Project Outcome Variable Scales

Intervention dosage		Outcome Variables							
		Environmental Attitudes and Conservation Behaviours (Maximum score = 72)		Health Behaviours (Maximum score = 32)		Wellness (Maximum score = 40)		Overall ECP Outcomes (Maximum score = 144)	
	n	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Never	31	48.29	6.90	20.46	2.40	34.14	4.22	102.89	9.66
Once a Year	13	50.18	6.02	22.29	3.4	32.68	4.63	105.15	8.52
Once a Term	7	51.49	5.98	21.29	2.98	31.13	5.53	103.90	5.45
Once a Month	26	58.06	6.09	22.66	3.70	33.71	4.75	114.43	12.29
Once a Week	79	55.53	5.99	22.17	3.07	33.31	3.99	111.01	9.71
Total	156	53.88	7.03	21.88	3.14	33.39	4.28	109.16	10.65

The graphs that follow (Figures 9 to 12) depict the mean distribution for each of the variable scales. Although the lines that connect the mean points suggest continuity between the mean points of the various intervention dosage group, in this instance, this is not the case. The lines are merely shown to demonstrate more clearly the positioning of the mean point relative to the previous and subsequent mean points. In order to fully support the research hypothesis, the graph was expected to ideally show a linear trend with increasing mean scores from the *never* dosage group to the *once a week* dosage group.

Figure 9. The Estimated Marginal Means for Learner Results on the Environmental Attitudes and Conservation Behaviours Scale

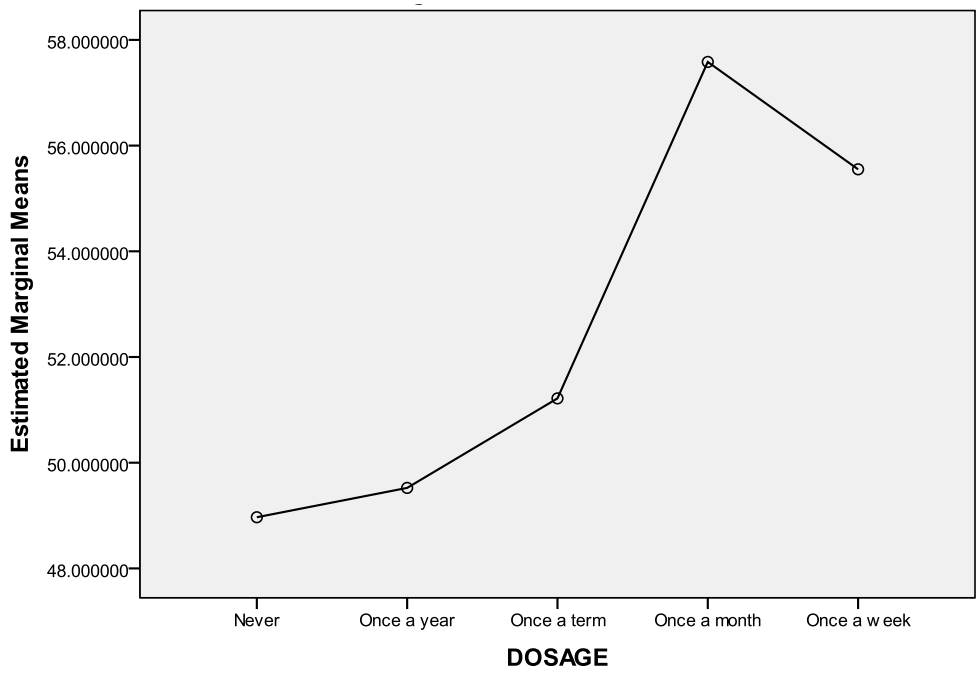


Figure 10. The Estimated Marginal Means for Learner Results on the Health Behaviours Scale

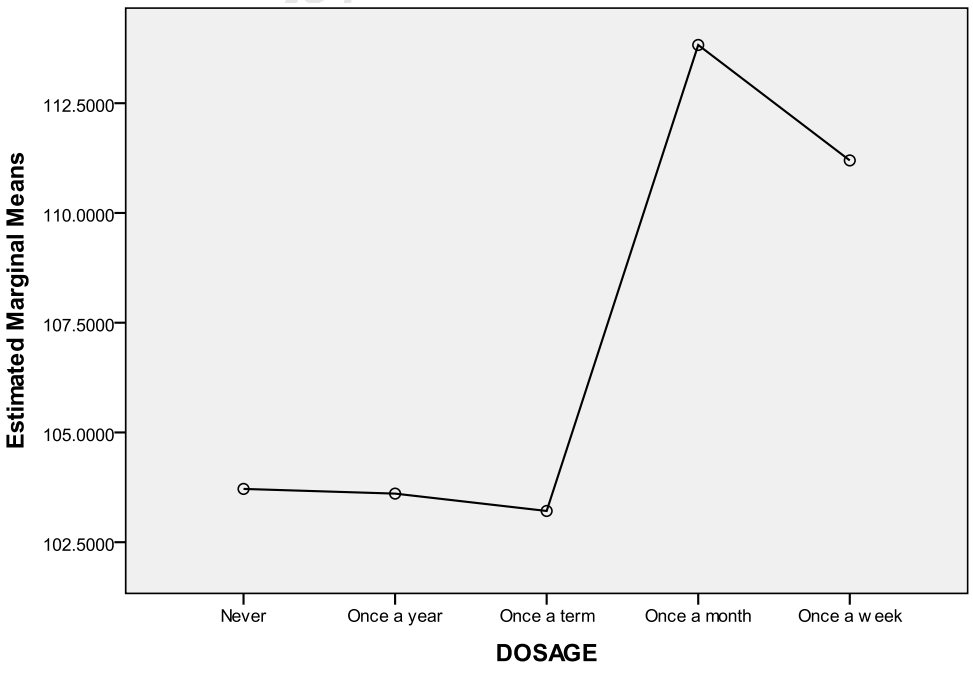


Figure 11. The Estimated Marginal Means for Learner Results on the Wellness Scale

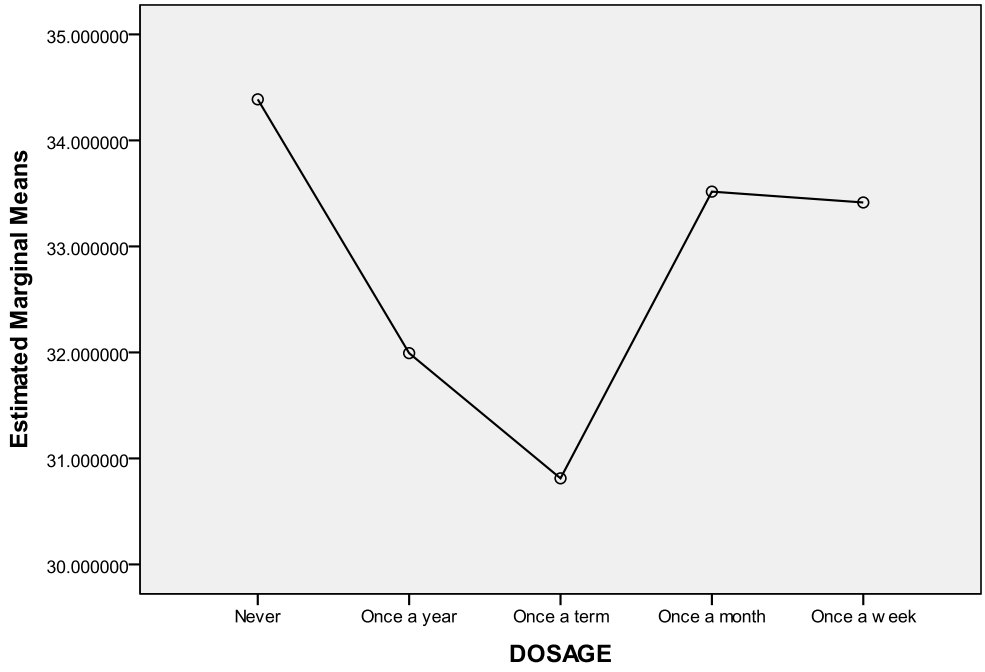


Figure 12. The Estimated Marginal Means for Learner Results on the Overall Earthchild Project Outcomes Scale

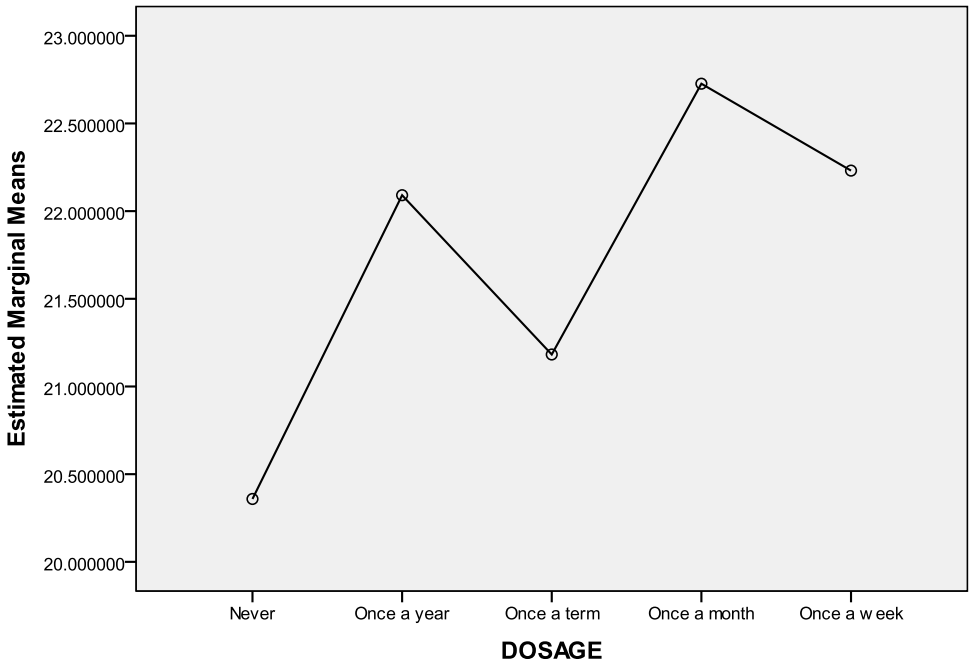


Table 2 together with the mean graphs (Figures 9 to 12) give an indication of how the data is distributed. It is evident that there is not a linear increase for the mean scores of the various intervention dosage groups as suggested by the hypothesis. The outcome graphs do, however, indicate a general upward trend of the mean scores for the learners who never or infrequently participate in the programme relative to those who participate once a month or more on the *EACB, HB* and *Overall ECP Outcomes* variables. Further analysis is needed to determine the statistical significance of the mean differences, assessing the likelihood of these differences being associated with the intervention or being merely due to chance (Rossi et al., 2004).

ANCOVA Results for Environmental Attitudes and Conservation Behaviours

Levene's test for homogeneity of variance indicated that there was not a significant difference in the error variance of the dependent variables across groups, $F(4,151) = .63$, $p = .64$. Boxplot 1 (Appendix H) indicated that there was also not significant deviation from normality within the data set. With these assumptions upheld, an analysis of variance, which controlled for the possible covariance of school attitudes and gender, could be confidently carried out. The ANCOVA results for *Environmental Attitudes and Conservation Behaviours* are presented in Table 3.

Table 3

ANCOVA Results for the Environmental Attitudes and Conservation Behaviours Scale with School Aptitude and Gender as Covariates

Source	*df*	*F*	η^2	*p*
School Aptitude	1	13.80*	.09	.00
Gender	1	.65	.00	.42
Intervention Dosage	4	10.48*	.22	.00

Note. *Significance at p< .05

The covariate, school aptitude, was significantly related to participants' environmental attitudes and behaviours, $F(1,149) = 13.80$, $p < .05$, $r = 0.85$. Gender was, however, not a significant covariate on this variable, $F(1,149) = .65$, $p > .05$, $r = .004$. Results indicated that the intervention dosage did have a significant effect on participants' score on the environmental attitudes and conservation behaviours scale, even after controlling for the effect of school aptitude, $F(4,149) = 10.48$, $p < .05$, $r = .22$.

This suggests that there is a significant difference between at least one of the mean comparisons of the dosage groups. To determine whether the difference/s lie/s in a linear pattern as hypothesised, a repeated contrast analysis was used, where each level was compared to the previous level (see Table 4). Error variance is necessarily inflated when each level is used more than once as in a repeated contrast analysis. To control for this, the significance level was set to $p < .01$.

Table 4

Repeated Contrast Results for Environmental Attitudes and Conservation Behaviours Scale

Intervention dosage	*Contrast estimate*	*Std. error*	*p*
Never vs. Once a Year	-0.55	2.00	.78
Once a Year vs. Once a Term	-1.69	2.79	.55
Once a Term vs. Once a Month	-6.37	2.54	.01
Once a Month vs. Once a Week	2.03	1.35	.14

Note. Significance at p< .01

The results indicated that the difference between the mean scores of the *once a term* group (*M* = 51.49, *SD* = 5.98, *N* = 7) and the *once a month* group (*M* = 58.06, *SD* = 6.09*, N* = 26) approaches significance, *p* = .013, but cannot be considered significant according to the more stringent significance level set for this analysis. The differences must then lie between comparison groups other than those presented in this repeated contrast analysis. One could speculate that the difference/s lie/s between the *never* (*M* = 48.29, *SD* = 6.90*, N* = 31) or *once a year* (*M* = 58.06, *SD* = 6.09*, N* = 26) groups, which are the two groups with the lowest mean scores, and the *once a month* (*M* = 58.06, *SD* = 6.09*, N* = 26) group, which is the group with the highest mean score. It is important to note that although there was not a significant increase in scores between each intervention dosage group when compared to the previous one, as hypothesised; there was a significant difference between at least one of the low intervention dosage groups and one of the higher intervention dosage groups. This suggests that the more activity sessions learners attended; the higher they were likely to score on the *Environmental Attitudes and Conservation Behaviours* scale.

ANCOVA Results for Health Behaviours

Levene's test for homogeneity of variance indicated that there was not a significant difference in the error variance of the dependent variables across groups, *F*(4,151) = 1.76*, p* = .14. Boxplot 2 (Appendix H) indicated that there was also not significant deviation from normality within the data set. With these assumptions upheld, an analysis of variance, which controlled for the possible covariance of school attitudes and gender, could be confidently carried out. The ANCOVA results for the *health behaviours* scale are presented in Table 5.

Table 5

ANCOVA Results for the Health Behaviours Scale with School Aptitude and Gender as Covariates

Source	*df*	*F*	*η2*	*p*
School Aptitude	1	1.40	.01	.24
Gender	1	1.69	.01	.20
Intervention Dosage	4	2.50*	.22	.045

Note. *Significance at p< .05

School aptitude was not a significant covariate for participants' health behaviours, $F(1,149) = 1.40$, $p = .24$, $r = .01$, and neither was gender, $F(1,149) = 16.02$, $p = .20$, $r = .01$. The results indicated that there was a significant effect of the intervention dosage on the *Health Behaviours* scale, $F(4,149) = 2.50$, $p = 0.045$, $r = 0.06$.

Again a repeated contrast analysis was used with the significance level set to $p < .01$ to control for Type One error. Table 6 presents a summary of the results.

Table 6

Repeated Contrast Results for Health Behaviours Scale

Intervention dosage	*Contrast estimate*	*Std. error*	*p*
Never vs. Once a Year	-1.73	1.03	.10
Once a Year vs. Once a Term	.91	1.45	.53
Once a Term vs. Once a Month	-1.54	1.32	.24
Once a Month vs. Once a Week	0.496	.70	.48

Note. Significance at p< .01

The analysis revealed that none of the mean comparisons considered, which looked at the difference between the mean of a dosage level contrasted to the previous dosage level, were statistically significant. This was so even when considered at a more lenient significance level of .05. Again, the differences must then lie between comparison groups other than those presented in this repeated contrast analysis. For example, between *never* ($M = 20.46$, $SD = 2.40$, $N = 31$), which is lowest scoring group, and *once a month* ($M = 22.66$, $SD = 3.70$, $N = 26$), which is the highest scoring group. So although the significance was not apparent when the groups were considered in a linear order, as hypothesised, a significant increase was detected between the mean scores of learners who attended the programme less frequently compared to those who attended more frequently on the *Health Behaviours* scale.

ANCOVA Results for Wellness

Levene's test for homogeneity of variance indicated that there was not a significant difference in the error variance of the dependent variables across groups, $F(4,151) = .62$, $p = .65$. Boxplot 3 (Appendix H) indicated that there was also not significant deviation from normality within the data set. With these assumptions upheld, an analysis of variance, which controlled for the possible covariance of school attitudes and gender, could be confidently carried out. The ANCOVA results for the *Wellness* scale are presented in Table 7.

Table 7

ANCOVA Results for the Wellness Scale with School Aptitude and Gender as Covariates

Source	*df*	*F*	*η 2*	*p*
School Aptitude	1	21.67*	.13	.00
Gender	1	.63	.00	.43
Intervention Dosage	4	1.55	.04	.19

Note. *Significance at p< .05

School aptitude was significantly related to participants' wellness, $F(1,149) = 21.67$, $p < .05$, $r = .13$. Gender was once again not a significant covariate, $F(1,149) = 0.63$, $p = .43$, $r = .004$. After controlling for the interaction of school aptitude with wellness, the results indicated that the intervention dosage does not have a significant effect on the *Wellness* scale, $F(4,149) = 1.55$, $p = .19$, $r = .04$. It was, thus, not necessary to conduct a post hoc analysis.

ANCOVA Results for Overall Earthchild Project Outcomes

Levene's test for homogeneity of variance indicated that there was not a significant difference in the error variance of the dependent variables across groups, $F(4,151) = 2.00$, $p = .10$. Boxplot 4 (Appendix H) indicated that there is also not significant deviation from normality within the data set. With these assumptions upheld, an analysis of variance, which controlled for the possible covariance of school attitudes and gender, could be confidently carried out. The ANCOVA results for the *Overall ECP Outcomes* are presented in Table 8.

Table 8

ANCOVA Results for the Overall Earthchild Project Outcomes with School Aptitude and Gender as Covariates

Source	*df*	*F*	*η2*	*p*
School Aptitude	1	22.72*	.13	.00
Gender	1	.07	.00	.80
Intervention Dosage	4	6.49*	.15	.00

Note. *Significance at p< .05

The covariate, school aptitude, was significantly related to the participants' overall outcome scores, $F(1,149) = 22.72$, $p < .05$, $r = .13$. Gender was, however, not a significant covariate on this variable, $F(1,149) = .07$, $p = .80$, $r < .01$. The results indicated that the intervention dosage did have a significant effect on the overall ECP outcomes scores even after controlling for the effect of school aptitude, $F(4,149) = 6.49$, $p < .05$, $r = .15$.

This suggests that there is a significant difference between at least one of the mean comparisons of the dosage groups. A post hoc, repeated contrast analysis was used to determine where the differences lie and whether the pattern was in accordance with the hypothesis, which indicated that there is a linear increase in the dosage levels (see Table 9).

Table 9

Repeated Contrast Results for Overall Earthchild Project Outcomes Scale

Intervention dosage	*Contrast estimate*	*Std. error*	*p*
Never vs. Once a Year	.11	3.13	.97
Once a Year vs. Once a Term	.395	4.38	.93
Once a Term vs. Once a Month	-10.62*	4.00	.009
Once a Month vs. Once a Week	2.63	2.12	.22

Note. *Significance at p< .01

The significance level was set to $p < .01$. The repeated contrast results indicate a significant difference between the mean scores of the *once a term* group ($M = 103.90$, $SD = 5.45$, $N = 7$) and the *once a month* group ($M = 114.43$, $SD = 12.29$, $N = 26$), $p = .009$. This result suggests that learners who attended the activity sessions more frequently, scored higher on the *Overall Earthchild Project Outcomes* scale, which includes questions relating environmental attitudes and conservation behaviours, health behaviours, and personal wellness.

Discussion

The results suggest that the research hypothesis–which states that the higher the dosage received by the learners, the more their attitudes and behaviours change in the desired direction on the four outcome variables–does hold but not as strongly as anticipated. Scores of learners who participate in the programme at least once a month are generally higher than those who participate only once a term or less on the *Environmental Attitudes and Conservation Behaviour (EACB)* scale, the *Health Behaviours (HB)* scale as well as the *Overall ECP Outcomes* scale. According to the hypothesis, the highest intervention dosage group (ie. learners who attended activities once a week) should have scored the highest on the variable scales. The results, however, indicate that the *once a month* dosage group scored higher on all of the scales. This could suggest that the optimal intervention dosage is once a month rather than the more frequent once a week. This is, however, unlikely and not logically plausible. Another possible explanation could be that learners reported that they participate in the programme once a week since they signed up for the weekly activities but in actuality received the programme much less due to the factors discussed in the process evaluation (Chapter 3).

The strongest support for the hypothesis was shown by the results on the *EACB* and *Overall ECP Outcome* scales. Results from the *HB* scale indicated a weaker association between the dosage of the intervention that the learner received and their health behaviours, and no significant differences were found between participant groups on the *Wellness* scale. The most positive findings from the outcome assessment were from the *Overall ECP outcomes* scale, which is a summation of all three outcomes–environmental attitude and conservation behaviours, health behaviours, and wellness. The statistical results showed a significant difference between the *once a term* and *once a month* groups. The graph (Figure 12) also presented a good indication of the increase in scores from the minimal intervention dosage groups–*never* to *once a term*–to the higher intervention dosage groups–*once a month* and *once*

a week. This suggests that regular participation in the programme is associated with higher scores on the programme outcomes scale. School aptitude was a significant covariate for the overall scores; the positive relationship suggests that learners who enjoy and attend school and after-school activities regularly are more likely to participate in the programme more frequently. After controlling for this covariate, however, there was still a significant effect. The fact that no interaction was found with gender on any of the outcome variables could indicate the programme's potential to equally benefit both girls and boys. Since there were significantly fewer boy respondents in the dosage samples, however, this result cannot be interpreted with confidence.

According to the mean differences of the groups on the three separate outcome variables within the overall Earthchild Project outcomes, the intervention has a greater effect on the *EACB* scale than *HB* or *Wellness.* A possible explanation for this is that the programme focuses more on this component of the programme. Again, school aptitude had a positive relationship with this variable but over and above this effect, a significant difference was still detected between the *once a term* and *once a month* intervention groups.

The results for the *Wellness* scale do not suggest a linear pattern in the least: respondents who never participate in the programme scored the highest on this variable, which is completely contrary to the hypothesis. A possible explanation for this puzzling result is that many factors external to the programme, such as the learners' home life, play an influential role in determining this outcome. The results also suggest that, as expected, school aptitude has a significant interaction with the responses on the *Wellness* scale, which influenced the results. Research suggests, however, that despite extraneous factors, a school-based intervention does have the potential to significantly influence learners' wellness (Villalba & Myers, 2008). It is more likely that the measurement does not accurately reflect the variable since although the questionnaire was based on research, it was not piloted on this population before administration (see design limitations). The researcher also suggests that this finding is quite possibly inexplicable; occurring for reasons beyond the explanatory capacity of this study.

Considering the noteworthy design limitations, the conclusions for this outcomes section are tentative and in no way establish casual relations or accountability for the intervention. To draw more conclusive results, especially regarding learner wellness, a comparative baseline for the respondents is necessary.

Results for Teacher Questionnaires

Data Analysis for Teacher Questionnaires

Thematic coding was used to analyse the qualitative data from the teacher questionnaire. Different kinds of changes highlighted in the teachers' responses were sorted into appropriate categories reflecting the changes they feel the programme has inspired for them (Davies & Dart, 2005). These were qualitatively compared to the intended outcomes stipulated in the programme theory evaluation (Chapter 2).

Limitations

The small sample size of eight teachers gave limited insight into how these teachers have benefited from the programme. The results are specific to these particular participants' experiences and cannot be generalized to how other teachers might experience the programme. The answers that the participants gave were unfortunately extremely brief and not as sophisticated and detailed as the researcher had hoped. The analysis should, thus, be viewed as a preliminary understanding of how some teachers could benefit from programme. It is suggested that more extensive and in-depth research be carried out to draw conclusive results.

Healthy Behaviours

The main theme in the teachers' responses regarding the changes in their personal lives after participating in the programme related to their awareness of unhealthy behaviour patterns and an increased effort to adopt healthier behaviours. Six of them mentioned something about healthy eating or dietary changes that they have made as a result of the programme. Their responses indicate that practical changes have been established in their personal lifestyles, as a result of the programme. For example, two of them mentioned consciously drinking more water and one claimed she now tries to not eat meat one day per week. This is consistent with the programme theory (Chapter 2), which revealed increased nutritional knowledge and developing healthier eating patterns as two of the main intermediate outcomes for the teacher interventions. It was also noted in the programme theory that the stakeholders intend and expect the knowledge and skills that teachers gain from the interventions to ultimately be fed down to their learners. Five of the teachers indicated that they have indeed done this by encouraging their learners to drink more water and eat healthier foods

Three of the teachers mentioned the yoga as one of the best things about the programme; one of them said, "It was the first time I did some yoga exercises and I could feel that it had a good result on my body." Three of them maintained that they have integrated yoga practices into their personal lives and two of the teachers claimed that the breathing techniques they learnt from the programme have been a practical tool in handling stress in- and outside the classroom. Three of them reportedly do yoga in class time with their learners; one claimed, "Yoga is a reminder of how the children can change their personal mind-frame and body awareness."

Environmental Attitudes and Conservation Behaviours

Increasing environmental knowledge and awareness of environmental problems in order to increase the teachers' pro-environmental or conservation behaviours are programme outcomes proposed in the theory evaluation. Only one of the teachers, however, mentioned anything to do with this outcome theme, saying that she had "become a vegetable gardener, a worm farmer and a keen composter" as a result of her involvement with the programme. No mention was made either of having passed the environmental knowledge and skills on to their learners regarding this programme outcome.

Interaction and Communication

Three of the teachers claimed to interact and communicate with others in a more positive and productive manner as a result of the skills they learned from the programme. Two of them pointed out the value of having the opportunity on the programme to interact with other teachers on a more social level, while also being able to share stories and talk about issues relating to their classes and school. One of the teachers related how being new to the school she

felt like an "outsider" but being part of the programme has played a significant role in integrating into the community. Another teacher believed that the programme has given her the skills to interact with the learners in a "more peaceful and meaningful way". These outcomes are consistent with those stated in the theory evaluation; the communication skills development activities are intended to provide teachers with the skills for more positive communication, as well as give them more confidence, socially and professionally. The retreats and workshops were also proposed to give teachers the space for positive social interaction with other teachers. One of the participants mentioned that she would have liked more time for free interaction with other teachers.

Relaxation/Stress Reduction

The treatments and the yoga activities done with the teachers are intended to help teachers relax, reduce their stress levels, and have some fun in order that they can be happier and ultimately become better teachers. Four of the teachers mentioned these outcome factors in the questionnaire; one explained how the few changes that the programme introduced into her life has brought a certain sense of "calmness", while another said that the programme created an awareness for her of just how stressed they are as teachers and gave her practical tools to manage that stress.

Conclusion

The responses from the teacher questionnaire suggest that the programme does inspire some positive changes in the teachers' personal and professional lives; the participants mentioned improvements to their personal and professional lives as a result of the programme in the main outcome themes–including improved healthy behaviours, interaction and communication, environmental attitudes and conservation behaviours, and reduced stress–specified in the programme theory. The weakest outcome, according to the teachers' responses, was the environmental and conservation aspect of the programme with only one teacher reporting changed behaviours. Two of the teachers noted how they believe the intervention to have great potential but suggested that its first challenge is to motivate other teachers to engage positively and actively with the programme. They recognized that many of their colleagues have not "grabbed the opportunity that the project has afforded" them because "they are not open to new experiences". These comments are consistent with the suggestion in the process evaluation (Chapter 3) that the programme could improve its reach by using more innovative and active ways to recruit teachers.

CHAPTER FIVE: CONCLUSION

This thesis presented a three part evaluation of the Earthchild Project – theory, process, and outcomes. A formative evaluation was conducted in an attempt to produce useful information that could assist the programme in making possible improvements that could enhance their performance (Rossi et al., 2004). A theory-driven approach to the evaluation was adopted in an attempt to develop the programme's theoretical framework and integrate it into the evaluation process (Chen, 1990). The preliminary theory evaluation gave the researcher the opportunity to meaningfully engage with the programme literature and stakeholders and elicit an extensive understanding of how and why the intervention functions as it does. Because the programme does not have a social scientific foundation but is based on programme stakeholders' lay knowledge and experiences, it was useful to compare their assumptions to the existing social scientific research to assess its underlying logic and plausibility.

The Earthchild Project is a social intervention implemented in primary schools in underprivileged areas around Cape Town, South Africa. A range of after-school activities, such as yoga, garden club, arts and crafts, Tai Chi, and worm-farming, are offered as well as some in-class initiatives, such as the Living Classrooms initiative. Many noteworthy benefits are proposed in the theory evaluation, such as an improved social and emotional development through building meaningful relationships as well as increased positive outlooks. The two main outcome orientations for the programme are identified as increasing pro-environmental attitudes and conservation behaviours, and increasing health behaviours and improving well-being. Although the programme is targeted primarily at the learners, teachers are also involved in the programme through retreats and workshops for their personal benefit as well as professional development.

Evaluation Results

The formative nature of the evaluation meant that the evaluation results were presented and interpreted in a way that could be considered useful to the programme stakeholders for the purpose of practical improvements and development. This section summarises the noteworthy strengths and weaknesses of the programme as identified in the theory, process, and outcomes evaluations.

Programme Strengths

Programme theory. Assessment of each of the Earthchild Project activities in the theory evaluation (Chapter 2) revealed that the underlying programme logic linking the activities with expected outcomes, which was made explicit through interviews with key stakeholders and examination of programme literature, is plausible and generally consistent with social scientific theories.

Programme process. One of the main strengths of the organisation is the small, tight-knit team of employees; the interviews and observations revealed that they are passionate about and highly invested in their work. The programme has good, albeit informal, communication within the staff as well as with their external stakeholders. Although the staff members admit that organisational resources are scarce they make use of what they have efficiently. They have also formed good relationships within their external environment and effectively use the services of volunteers and partnering organisations to support the intervention.

Programme outcomes. Although the outcomes evaluation did not show a significant linear increase for the various intervention dosage groups on the outcome variables, the mean scores demonstrated higher scores for the

more frequent intervention groups compared to the less frequent intervention groups on the *Environmental Attitudes and Conservation Behaviours*, *Health Behaviours*, and *Overall Earthchild Project Outcomes* variables with significant differences between the *once a term* and *once a month* groups on the *Overall Outcomes* scale. Although there are limitations to the outcomes evaluation that inhibit the researcher from drawing substantial conclusions about the effect of the programme, these results do suggest that the Earthchild Project participants are generally scoring conservatively higher on the main outcome variables.

Programme Weaknesses

Programme theory. The theory evaluation (Chapter 2) highlights the fact that the programme is not based on social scientific theories or logic but was initiated and continues to develop through the personal experiences and beliefs of the stakeholders, especially the staff members. There are no stipulated criteria for which activities are incorporated into the programme but inclusion is based primarily on the staff members' lay judgements and the resources available at that time. This relates to the process evaluation (Chapter 3) finding that they seem to introduce too many different elements just because it seems to be a good idea without systematically researching and assessing the potential value it could add to the intervention.

A key finding from the theory evaluation (Chapter 2) is that the programme's goals and objectives are not sufficiently clarified and specified and those that were elicited tend to be rather lofty and idealistic. The programme stakeholders took pride in the fact that the programme is open to change and flexible in response to the needs of the target population and indeed this can be an asset but the changes incorporated need to be supported by concrete evidence and sound logical reasoning. They should ensure that their foundations are strong and their core activities are appropriately developed and standardised in order to systematically establish what does and does not work so that they are able to provide a consistent service that is most likely to give rise to the intended benefits to participants.

Programme process. After more than five years of operation, some of the stakeholders indicated that they believe the programme is moving into a more mature stage of development. The theory and process evaluations suggested, however, that it, in fact, should still be considered to be in a piloting stage. This is because there continues to be considerable experimentation with the goals and processes of the programme. The substantial amount of changing indicates that the programme is not sufficiently established to be considered mature. The maturity of a programme is not necessarily related to the lifespan of the programme but indicates whether it is sufficiently stable and consistent in its operations and the services it provides. The Earthchild Project needs to establish a more solid foundation and to settle and routinize their organisational and service activities, to be considered mature.

The voluntary nature of participation in the programme unavoidably puts it at risk of engaging a bias sample of the target population; this risk is augmented by the programme's informal recruitment strategy, which does not support full coverage of the target population. The challenge for the programme is to recruit and retain a variety of participants from the target population. One noteworthy bias is that the programme engages more females than males, probably due to the nature of the activities and the predominantly female facilitation team. The outcomes evaluation (Chapter 4) indicated that gender is not a significant covariate on any of the outcomes, suggesting that

the programme could equally produce benefits for male and female learners. Given the knowledge of this weakness and its impact potential, the programme could focus on recruiting and retaining more boy learners into the programme.

A number of factors – including frequent learner absenteeism, facilitator or volunteer absenteeism and school or external conditions that cause activities to be cancelled – were identified in the process evaluation (Chapter 3) as barriers to the programme being received by participants at the intended dosages. This could be problematic for the fidelity of the intervention and is also a possible explanation for why in the outcome evaluation the 'Once a Month' dosage group scored consistently higher on the outcome variable scales than the 'Once a Week' group. Even though the learners sign up to participate in the activities once a week, they may in reality not be receiving the intervention as frequently as intended.

The organisational, administrative and management functions of the organisation are unstructured and relatively informal. The staff has taken definite steps to improve these functions by hiring an external consultancy to train and help implement processes and procedures but admittedly still need to improve in establishing a more systematic approach. The organisational management is lax, which could pose a threat to the formal accountability of programme implementation.

Programme outcomes. The learners' responses on the *Wellness* scale in the outcomes evaluation (Chapter 4) demonstrated particularly problematic results for the programme; the group who reportedly had never participated in the programme scored the highest on this scale. A number of possible explanations, such as the influence of extraneous variables, were offered and a more rigorous research design would have to be utilised to establish more conclusive results. This preliminary finding, however, could suggest the wellness component of the programme for the learners is relatively weak.

The outcomes results suggest that the intervention has a greater effect on the learners' scores for the *Environmental Attitudes and Conservation Behaviours* scale compared to the *Health Behaviours* and *Wellness* components. Interestingly, the results from the teachers' outcomes questionnaire suggested the exact opposite; only one of the teachers mentions environmental type outcomes as a benefit she experienced as a result of the programme while the other seven responses focus exclusively on the health and well-being aspects of the programme. This could indicate that the programme is unintentionally focusing on different outcomes for these two different target populations. This finding is problematic, however, since it is not consistent with the programme's intentions; the theory evaluation did not reveal that different focuses were intended for these two groups.

Recommendations for Programme Improvements

In the previous section the strengths and weaknesses of the programme were presented. Following on from these observations, key recommendations for improvements to the programme are suggested. It is good to note that recommendations derived from evaluation are based on predictive assumptions and their accuracy can, therefore, never be completely guaranteed (Patton, 1997). In term of practical utilization, the relevant programme stakeholders should interpret these recommendations within the context of their programme and as malleable guidelines.

Programme theory. Although the programme's outcome theory was found to be generally consistent with existing social science literature, the programme could consider aligning their activities to research more purposefully, which could increase their credibility and optimize the potential benefit for participants. The potential for improving participants' academic performance was emphasized in the literature as an important aspect of an after-school-time programme but the Earthchild Project does not intentionally included it as an outcome. Given the potential benefits and importance of this outcome for participants as well as the organisation, in terms of funding and support, they could consider incorporating an academic orientation to their existing activities.

The programme could also consider concentrating on developing realistic and attainable short-term outcome objectives to focus their current activities and guide future developments, as they have done with their organisational objectives. Clarifying outcome goals and objectives in this way could establish a more solid foundation for the programme and a clearer understanding of what they are trying to achieve with the learners at every session.

Programme process. Establishing a systematic and cohesive approach to making key decisions is critical to ensuring that the intervention is optimising the benefits for the participants, especially since they indicate they have limited funding and resources. They should monitor and evaluate the activities and their actual short-term outcomes more critically to ensure they are in accordance with their long term goals and visions and that every activity included in the programme has a specific, predetermined purpose.

Limitations to the Study and Directions for Future Research

Throughout this paper it has been reiterated that as a formative evaluation the emphasis of this study was to aid in the further development of the programme. Findings from this study, such as the poorly defined outcome goals and objectives, indicate that the programme is not ready for a more stringent evaluation, which proposes to establish accountability. The suggestions and recommendations that the researcher formulated from the findings are intended, however, to guide the programme towards a more evaluation appropriate state, supporting the future possibility of such an evaluation. Once the programme is more established and in a more mature stage of development, it could be worthwhile for them to implement a more thorough outcomes evaluation as well as a cost-benefit analysis, which assesses whether the positive outcomes related to the programme outweigh the costs incurred, to establish the efficiency and accountability of the organisation.

The real world setting of the programme meant that the researcher had to deal with considerable data constraints – notably for the process and outcomes sections – and could not always adopt the optimal methodological approaches (Bamberger et al., 2006). Although this is relatively common in evaluations where the programme has already been established and alternative strategies were adopted, it did mean that the methods were not always as strong as the researcher intended, which could limit the findings.

The limitations of the outcomes evaluation were presented in detail in Chapter Four. The outcomes evaluation section presented a modest indication of outcomes that the programme may be influencing. The results cannot, however, due to the substantial limitations of the study reveal whether there were changes in the participants compared to non-participants or what the cause of such changes might have been; it can by no means establish accountability for the programme. Further evaluation of the outcomes is recommended, perhaps using a

stronger pre-post study or a time-series design. The outcomes theory looks at what the evaluator and staff members agreed upon as the main outcome orientations of the programme; other important outcomes are also presented, however, such as developing positive outlooks on life and building meaningful relationships, which were not addressed in the learner questionnaire; a wider range of the outcomes could be assessed to give a more comprehensive understanding of the value of the intervention.

REFERENCES

Abrahams, Z., de Villiers, A., Steyn, N. P., Fourie, J., Dalais, L., Hill, J., Draper, C. E., & Lambert, E. V. (2011). What's in the lunchbox? Dietary behaviour of learners from disadvantaged schools in the Western Cape, South Africa. *Public Health Nutrition, 14*, 1752-1758.

Arguelles, L., McCraty, R., & Rees, A. R. (2003). The heart in holistic education. *ENCOUNTER: Education for Meaning and Social Justice, 16,* 13-21.

Ashwell, A. N. (2010). *Identity and belonging: Urban nature and adolescent development in the City of Cape Town* (Unpublished doctoral dissertation). University of Cape Town, Cape Town, South Africa.

Awartani, M., Whitman, C.V., & Gordon, J. (2008). Developing instruments to capture young people's perceptions of how school as a learning environment affects their well-being. *European Journal of Education, 43,* 51-70.

Babbie E. R., & Mouton J. E. (2001). *The practice of social research.* (South African ed.). Oxford; Cape Town: Oxford University Press.

Bamberger, M., Rugh, J., & Mabry, L. (2006). *Real world evaluation: Working under budget, time, data, and political constraints.* Thousand Oaks, CA: Sage.

Baranowski, T., & Stables, G. (2000). Process evaluations of the 5-a-day projects. *Health Education and Behavior, 27,* 157-166.

Becker, B. E., & Luther, S. S. (2002). Social-emotional factors affecting achievement outcomes among disadvantaged students: Closing the achievement gap. *Educational Psychologist, 37*, 197-214.

Beckett, M., Borman, G., Capizzano, J., Parsley, D., Ross, S., Schirm, A., & Taylor, J. (2009). *Structuring out-of-school time to improve academic achievement: A practice guide* (NCEE #2009-012). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/publications/practiceguides

Birdee, G. S., Yeh, G. Y., Wayne, P. M., Phillips, R. S., Davis R. B., & Gardiner, P. (2009). Clinical applications of yoga for the pediatric population: a systematic review. *Academic Pediatrics, 9,* 212-220.

Black, D. S., Milam, J., & Sussman, S. (2009). Sitting-meditation interventions among youth: A review of treatment efficacy. *Pediatrics, 124,* e532-e541.

Blair, D. (2009). The child in the garden: An evaluative review of the benefits of school gardening. *The Journal of Environmental Education, 40*, 15-38.

Bonnett, M. (2002). Education for sustainability as a frame of mind. *Environmental Education Research, 8*, 9-20.

Bonnett, M. (2007). Environmental education and the issue of nature. *Journal of Curriculum Studies, 39*, 707-721.

Brown, H. (2004). Action research in the classroom: A process that feeds the spirit of the adolescent. *International Journal of Qualitative Methods, 3*, 25-41.

Carver, R. (1996). Theory for practice: A framework for thinking about experiential education. *Journal of Experiential Education, 19*, 8-13.

Catalano, R. F., Hawkins, J. D., Berglund, M. L., Pollard, J. A., & Arthur, M. W. (2002). Prevention science and positive youth development: Competitive or cooperative frameworks? *Journal of Adolescent Health, 31,* 230-239.

Century, J., Rudnick, M., & Freeman, C. (2010). A framework for measuring fidelity of implementation: A foundation for shared language and accumulation of knowledge. *American Journal of Evaluation, 31*, 199-218.

Chen, H. (1990). *Theory-Driven Evaluations*. Newbury Park, CA: Sage.

Chen, H. (2003). Theory-driven approach for facilitation of planning health promotion or other programs. *The Canadian Journal of Program Evaluation, 18*, 91-113.

Chen, H. (2005). *Practical Program Evaluation: Assessing and improving planning, implementation, and effectiveness.* California, USA: Sage.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Chicago: Rand McNally.

Coryn, C. L. S., Noakes, L. A., Westine, C. D., & Schroter, D. C. (2010). A systematic review of theory-driven evaluation practice from 1990 to 2009. *American Journal of Evaluation, 32,* 199-226.

Crutchfield, L. R., & McLeod Grant, H. (2008). *Forces for Good: The six practices of high-impact nonprofits.* San Francisco, USA: Wiley.

Davies, R., & Dart J. (2005). *The 'most significant change' (MSC) technique: A guide to its use.* Retrieved from http://www.mande.co.uk/docs/MSCGuide.pdf

Dechamps, A., Lafont, L., & Bourdel-Marchasson, I. (2007). Effects of Tai Chi exercises on self-efficacy and psychological health. *European Review of Aging and Physical Activity, 4*, 25-32.

Department of Basic Education. (2012). Curriculum and Assessment Policy Statement (CAPS): Life Skills – foundation phase (ISBN: 978-1-4315-0422-0). Republic of South Africa. Retrieved from http://www.education.gov.za/LinkClick.aspx?fileticket=DzQFA7nsKjY%3D&tabid=671&mid=1878

Donaldson, S. I., & Gooler, I. E. (2003). Theory-driven evaluation in action: Lessons from a $20 million statewide work and health initiative. *Evaluation and Programme Planning, 26*, 355-366.

Donaldson, S. I., & Lipsey, M. W. (2006). Roles for theory in contemporary evaluation practice: Developing practical knowledge. In I. Shaw, J. C. Greene, & M. M. Mark (eds.), *The Handbook of Evaluation: Policies, Programs, and Practices* (pp. 56-75). London: Sage.

Draper, C. E., de Villiers, A., Lambert, E. V., Fourie, J., Hill, J., Dalais, L., Abrahams, Z., & Steyn, N. P. (2010). HealthKick: A nutrition and physical activity intervention for primary schools in low-income settings. *BioMed Central Public Health, 10*, 398-410.

Durlak, J. A., Weissberg, R. P., Dymnacki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82,* 405-432.

Faber-Taylor A., Kuo F. E., & Sullivan W. C. (2002). Views of nature and self-discipline: Evidence from inner-city children. *Journal of Environmental Psychology, 22*, 49-63.

Fasko, D. (2001). Education and creativity. *Creativity Research Journal, 13*, 317-327.

Festeu D., & Humberstone B. (2006). *Non-formal education through outdoor activities guide* [Electronic version]. European Institute for Outdoor Adventure Education and Experiential Learning. Retrieved from http://www.eoe-network.org/NFE%20GuideWeb.pdf

Finger, M. (1994). Form knowledge to action? Exploring the relationships between environmental experiences, learning, and behaviour. *Journal of Social Issues, 50,* 3, 141-160.

Flay, B. R. (2002). Positive youth development requires comprehensive health promotion programs. *American Journal of Health Behavior, 26,* 407-424.

Forbes, S. H. (2003). *Holistic Education: An Analysis of its Ideas and Nature.* Brandon, VT, USA: Foundation for Educational Renewal.

Funnell, S. C., & Rogers, P. J. (2011). *Purposeful program theory: Effective use of theories of change and logic models.* San Francisco: Jossey-Bass.

Geiger, E., & Britsch, B. (2003). *Out-of-School Time Program Evaluation: Tools for Action*. Retrieved from http://www.nwrel.org/ecc/21century/index.html

Gillham, B. (2008). *Observation techniques: Structured to unstructured.* London: Continuum.

Gonzalez, M. V. (2003, November). The importance of environmental education in childhood. In B. L. Hall & M. de France (Eds.), *Learning and the World We Want Conference* (pp. 127-129). Symposium conducted at the University of Victoria in Victoria, Canada.

Gough, A. (2005). Sustainable schools: Educational processes. *Applied Environmental Education and Communication, 4*, 339-351.

Granger, R. C. (2008). After-school programs and academics: Implications for policy, practice, and research. *Society for Research in Child Development, 22*, 3-19.

Guerra, N.G. & Williams, K.R. (2003). Implementation of school-based wellness centers. *Psychology in the Schools, 40,* 5, 473-487.

Halpern, R. (2002). A different kind of child development institution: The history of after-school programs for low-income children. *Teacher College Record, 104*, 178-211.

Hilhorst, D. (2002). Being good at doing good? Quality and accountability of humanitarian NGOs. *Disasters, 26*, 193-212.

Itin, C. M. (1999). Reasserting the philosophy of experiential education as a vehicle for change in the 21st century. *The Journal of Experiential Education, 22*, 91-98.

Johnston, J. D. (2003, November). The role of intergenerational equity in sustainable development: What's love got to do with it? In B. L. Hall & M. de France (Eds.) *Learning and the World We Want Conference* (pp. 118-121). Symposium conducted at the University of Victoria in Victoria, Canada.

Kevern, J., & Webb, C. (2001). Focus groups as a tool for critical social research in nurse education. *Nurse Education Today, 21*, 323-333.

Lamb, T. (2004). *Health benefits of yoga.* Retrieved from http://www.philmilgrom.com/pdf/BenefitsYoga.pdf.

Larimer, M. D. (2008). *Authentic education and the innate health model: An approach to optimizing the education of the whole person* (Doctoral dissertation). Retrieved from http://wvuscholar.wvu.edu:8881//exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8xNDE0OA==.pdf

Lauzon, L. (2003, November). Teacher wellness: An interpretative inquiry. In B. L. Hall & M. de France (Eds.) *Learning and the World We Want Conference* (pp. 146-151). Symposium conducted at the University of Victoria in Victoria, Canada.

Leeming, F. C., & Dwyer, W. O. (1995). Children's environmental attitude and knowledge scale: Construction and validation. *Journal of Environmental Education, 26*, 22-42.

Lewis, D. (2007). *The management of non-governmental development organizations.* (2nd ed.). New York: Routledge.

Lewis, E., Mansfield, C., & Baudains, C. (2008). Getting down and dirty: Values in education for sustainability. *Issues in Educational Research, 18*, 138-155.

Lieberman, G. A., & Hoody, L. L. (1998). *Closing the achievement gap: Using the environment as an integrating context for learning. Results of a nationwide study* (Executive summary report for the State Education and Environment Roundtable). Retrieved from http://eric.ed.gov/PDFS/ED428943.pdf

MacEachren, Z. (2000). Crafting as a practice of relating to the natural world. *Canadian Journal of Environmental Education, 5*, 186-199.

Matthews, I., Griggs, R., & Caine, G. (1999). The experience review of interventions and programmes dealing with youth violence in urban schools in South Africa. *Independent Projects Trust.*

McLeod, B., & Allen-Craig, S. (2004, July). *An evaluation of an experiential learning and outdoor education school program on the life effectiveness skills of middle school boys.* Proceedings of the International Outdoor Education Research Conference. Latrobe University Bendigo, Victoria. Retrieved from http://www.latrobe.edu.au/oent/C_D_conference_2004/Conference%20CD/papers/mcLeod.pdf

McLoughlin, C. S., & Kubick, R. J. (2004). Wellness promotion as a life-long endeavour: Promoting and developing life competencies from childhood. *Psychology in the Schools, 41*, 131-141.

McVeigh, J. A., Norris, S. A., Cameron, N., & Pettifor, J. M. (2004). Associations between physical activity and bone mass in black and white South African children at age 9 yr. *Journal of Applied Physiology, 97*, 1006-1012.

Morgensen F., & Mayer, M. (2005). Perspectives on environmental education – a critical framework. In F. Morgensen, & M. Mayer (Eds.), *Eco-schools: Trends and Divergences,* (pp. 10-25) [Electronic version]. Vienna: Austrian Federal Ministry of Education, Science and Culture.

Mpeshe, O. (2009, 16 April). Young boys feed their families. *Vukani,* p. 4.

Mũkoma, W., & Flisher, A.J. (2004). Evaluations of health promoting schools: a review of nine studies. *Health Promotion International, 19,* 357-368.

Musser, L. M., & Malkus, A. J. (1994). The children's attitudes towards the environment scale. *Journal of Environmental Education, 25*, 22-26.

Munro, A., & Bloor, M. (2010). Process evaluation: The new miracle ingredient in public health research? *Qualitative Research, 10*, 699-713.

Naidoo, R., Coopoo, Y., Lambert, E. V., & Draper, C. (2009). Impact of a primary school-based nutrition and physical activity intervention on learners in KwaZulu-Natal, South Africa: A pilot study. *South African Journal of Sports Medicine, 21*, 7-12.

Orr, J. M., Sachett, P. R., & Dubois, C. L. (1991). Outlier detection and treatment in I/O psychology: A survey of researcher beliefs and an empirical illustration. *Personnel Psychology, 44*, 473-486.

Patton, M. (1997). *Utilization-Focused evaluation: The new century text.* Thousand Oaks, CA: Sage.

Pawson, R. & Tilley, N. (1997). *Realistic Evaluation.* London: Sage.

Prilleltensky, I., & Nelson, G. (2000). Promoting child and family wellness: Priorities for psychological and social interventions. *Journal of Community and Applied Social Psychology, 10*, 85-105.

Rahm, J. (2002). Emergent learning opportunities in an inner-city youth gardening program. *Journal of Research in Science Teaching, 39*, 164-184.

Rickinson, M. (2001). Learners and learning in environmental education: A critical review of the evidence. *Environmental Education Research, 7*, 207-320.

Roffman, J. G., Pagano, M. E., & Hirsch, B. J. (2001). Youth functioning and experiences in inner-city after-school programs among age, gender, and race groups. *Journal of Child and Family Studies, 10*, 85-100.

Rogers, P. J. (2000). Program theory: Not whether programs work but how they work. In D. L. Stufflebeam, G. F. Madaus, & T. Kellaghan (Eds.), *Evaluation Models* (pp. 209-232). Boston: Kluwer.

Rogers, P. J., Petrosino, A., Huebner, T. A., & Hacsi, T. A. (2000). Program theory evaluation: Practice, promise, and problems. *New Directions for Evaluation, 87*, 5-13.

Rosenthal, R., & Rosnow, R. L. (2008). *Essentials of behavioral research: Methods and data analysis.* (3rd ed.). New York: McGraw-Hill.

Rossi, P. H., Lipsey, M. W., & Freeman, H. E. (2004). *Evaluation: A systematic approach.* Thousand Oaks, CA: Sage

Roth, J., Brooks-Gunn, J., Murray, L., & Foster, W. (1998). Promoting healthy adolescents: Synthesis of youth development programme evaluations. *Journal of Research on Adolescence, 8*, 423-459.

Saunders, R. P., Evans, M. H., & Joshi, P. (2005). Developing a process-evaluation plan for assessing health promotion program implementation: A how-to guide. *Health Promotion Practice, 6*, 134-147.

Scheirer, M. (1996). A template for assessing the organisational base for programme implementation. *New Directions for Evaluation, 72*, 61-79.

Shalem, Y. & Hoadley, U. (2009). The dual economy of schooling and teacher morale in South Africa. *International Studies in Sociology in Education, 19*, 119-134.

Silverman, L. (2004). At-risk youth and the creative process. In *ARTernatives for At-Risk Youth Conference, 14 May 2004* (pp. 1-5). Colorado Springs, USA: Grifted Development Centre.

Taylor, N. (2007). Equity, efficiency and the development of South African schools. *International Handbook of School Effectiveness and Improvement, 17*, 523-540.

Taylor, S., van der Berg, S., Reddy, V., & Janse van Rensburg, D. (2011). H*ow well do South African schools convert grade 8 achievement into matric outcomes?* Working paper, Stellenbosch University, Stellenbosch, South Africa.

Temple, N. J., Steyn, N. P., Myburgh, N. G., & Nel, J. H. (2006). Food items consumed by students attending schools in difference socioeconomic areas in Cape Town, South Africa. *Nutrition, 22*, 252-258.

Tilbury, D., & Ross, K. (2006). *Living Change: Documenting good practice in education for sustainability in NSW.* Macquarie University, Sydney, and Nature Conservation Council, NSW. Retrieved from, http://www.aries.mq.edu.au/publications/aries/LivingChange/framework.pdf

Villalba, J.A. (2007). Incorporating wellness into group work in elementary Schools. *The Journal for Specialists in Group Work, 32,* 31-40.

Visser, M. (2003). Risk behaviour of primary school learners in a disadvantaged community – a situation analysis. *South African Journal of Education, 23*, 58-64.

Wall, R. B. (2005). Tai Chi and mindfulness-based stress reduction in a Boston public middle school. *Journal of Pediatric Health Care, 19*, 230-237.

Webber, A. (2008, 27 June). Children Gardening. *The Big Issue*, *12*, 17-19.

Weiss, C.H. (2004). On theory-based evaluation: Winning friends and influencing people. *Evaluation Exchange, 9*, 2–3. Retrieved October 17, 2011, from http://www.gse.harvard.edu/hfrp/eval/archives.html.

W. K. Kellogg Foundation. (2004). *Logic model development guide: Using logic models to bring together planning, evaluation, and action.* Retrieved from http://www.wkkf.org/knowledge-center/resources/2006/02/WK-Kellogg-Foundation-Logic-Model-Development-Guide.aspx

Zomorrodian, A., & Matei, L. (2010). Program evaluation: Its significance and priority for shaping and modification of public policies: A comparative analysis (with Lucica Matei). Submitted at the 17th Annual meeting of American Society of Business and Behavioral Sciences.

Appendix A

Structured Interview Questions for Donor Representatives of the Earthchild Project

1) How did you come to know about the project?
2) What is the level and nature of your involvement with the Earthchild Project?
3) Why did you get involved with the project?
4) Who do you believe the target population for the programme are?
5) How do you believe the programme benefits the target population?
6) Are there, in your opinion, any people who indirectly impact from the programme?
7) What, in your opinion, does the Earthchild Project aim to achieve? Short-and long-term.
8) How do you think the Earthchild Project plans on practically achieving this?
9) What do think it is about the programme that might generate change in the learner or teacher who participates?
10) What for you are the key factors about the programme that make it work?
11) How do you determine if the Earthchild Project is making a difference?
12) Are there any conditions (external to the programme) that contribute to its success? What are these?
13) What do you think the programme does particularly well?
14) What do you think the weaknesses of the programme are?
15) What do think are barriers to the success of the programme?
16) What changes would you make to the organization?

Appendix B

Structured Interview Questions for School Principals Involved in the Earthchild Project

1) How did your school get involved with the ECP?
2) Why did you agree to let this programme run in your school?
3) Do you feel that the project has had an impact on your school? Expand.
4) Do you think certain learners are more inclined to take part in the programme?
5) Can you see a difference in students that participate in the programme that you think is because of the programme?
6) What do you think makes the programme work? What are its strengths?
7) What do you think are barriers to the success of the programme?
8) What do you think the ECP could do better? What are its weaknesses?
9) How have parents reacted to the programme? And the broader community?
10) What do you hope the ECP programme will do in the long term in your school?

Appendix C

Structured Interview Questions for Staff Members of the Earthchild Project

1) Why did you get involved with the project?
2) Why do you work for the Earthchild Project?
3) Do you enjoy working for the Earthchild Project? Why?
4) Do you think there are sufficient staff members for the Earthchild Project to accomplish what it should?
5) Do you feel like you meet the needs of your position at the Earthchild Project?
6) What are your short and long term goals as an employee of the ECP?
7) Do you feel like there is sufficient training offered to staff?
8) In what way are you challenged in your position?
9) How do you overcome these challenges?
10) What improvements do you think can be made in the organization of the Earthchild Project?

Appendix D

Focus Group Questions for Staff Members of the Earthchild Project

1) What are the main resources needed for the Earthchild Project to accomplish what it intends to?
2) Do you think the Earthchild Project has sufficient resources to be successful?
3) Are there any conditions (external to the programme) that contribute to its success? What are these?
4) Describe who you believe your target population to be.
5) What do you think the main needs of your target population are?
6) How do you think the Earthchild Project is addressing the needs of the target population?
7) Describe the process through which people from the target population are supposed to get involved with the Earthchild Project.
8) Why do you think teachers and learners join the ECP?
9) What types of learners and teachers are drawn to the programme?
10) What types of learners and teachers are likely to benefit from the programme?
11) In what ways do you think the Earthchild Project could be more effective in reaching its target population?
12) What do you think the main purpose of the Earthchild Project is?
13) What is it about the programme that might generate change in the learners, teachers and communities?
14) What does the Earthchild Project aim to achieve? Short-and long-term.
15) How do you think the Earthchild Project plans on practically achieving this?
16) How do you determine if the Earthchild Project is making a difference?
17) What are the main barriers to the success of the Earthchild Project?
18) How do you see the ECP overcoming these barriers?

If-then statements are brainstormed for each of the ECP activities relating to intended outcomes. Each staff member gets two or three activities to brainstorm and create causal chains individually. Then sharing and brainstorming together.

Appendix E

Observational Checklist for Earthchild Project Activities

Date:	**Number of Girl Learners:**
Activity:	**Number of Boy Learners:**
School:	

OBSERVATION OBJECTIVES	**RATING**	
Structural-Procedural		
Approximate time duration of activity		
Approximate time duration of instruction or explanation		
Approximate time duration of experiential learning		
The facilitator can explain the objectives of the lesson	Yes	No
These objectives were evident in the actual lesson	Yes	No
The lesson seemed to fit into the broader ECP philosophy. It had elements of: • Environmental education • Wellness promotion • Holistic education	Yes Yes Yes Yes	No No No No
Attendance register was taken	Yes	No
Feedback form was completed	Yes	No
Structural-Educative		
There was a lesson plan: • In the facilitator's mind • Written down	Yes Yes Yes	No No No
There was evidence that the lesson plan was executed	Yes	No
There were information notes for the lesson	Yes	No
All the necessary resources for the lesson were available	Yes	No
Instructional-Pedagogical		
The facilitator was confident: They interacted with the kids confidently They spoke to the group confidently	Yes Yes Yes	No No No

The facilitator was able to maintain an appropriate degree of order	Yes	No
The facilitator's behaviour was appropriate	Yes	No
The class teacher was involved with the activity	Yes	No
The teacher involvement had a positive impact on the implementation of the activity	Yes	No
Instructional-Student Engagement		
The learner were given opportunities to freely express themselves: • The learners were given opportunities to explore the activity • The learners were given opportunities to ask questions	Yes Yes Yes	No No No
The learners were given a chance to interact with other learners regarding the activity	Yes	No
The learners were given a chance to interact with a facilitator	Yes	No
The learners engaged positively with the activity: • The learners actively participated throughout the whole lesson • The learners looked like they were interested in the activity • The learners looked like they were enjoying themselves during the activity	Yes Yes Yes Yes	No No No No
General comments:		

Appendix F

Outcomes Questionnaire for Learners

Name			
School	Sakumlandela	Zerilda Park	
Grade			
Gender	Girl (female)	Boy (male)	
1. Do you know about the Earthchild Project?		YES	NO
2. Are you part of the Earthchild Project?		YES	NO
3. If YES how often do you take part in Earthchild Project activities?			
About once a week	About once a month	About once a term	About once a year
4. In the morning when you wake up, do you want to go to school?			
No, hardly ever	Sometimes	Most times	Yes, almost always
5. Do you enjoy school?			
No, hardly ever	Sometimes	Most times	Yes, almost always
6. How often do you miss school?			
About once a week	About once a month	About once a term	About once a year
7. Do you work hard at your schoolwork?			
No, hardly ever	Sometimes	Most times	Yes, almost always
8. Do you think you are good at school work?			
No, not at all	OK	Quite good	Yes, very good
9. What do you usually do after school?			
Homework	Watch TV	Play with friends	Sport
Play by myself	Household chores	Work	Read
Hobbies	Earthchild Project activities	Other	
10. Do you enjoy your time after school?			
No, hardly ever	Sometimes	Most times	Yes, almost always

11. Do you pick up litter?			
No, hardly ever	Sometimes	Quite a bit	Yes, whenever I can
12. Do you recycle?			
No, hardly ever	Sometimes	Quite a bit	Yes, whenever I can
13. Do you enjoy being outdoors?			
No, hardly ever	Sometimes	Most times	Yes, almost always
14. Do you enjoy being in nature?			
No, not at all	A little bit	Quite a bit	Yes, a lot
15. Do you think about how things you do might affect the environment?			
No, not at all	A little bit	Quite a bit	Yes, a lot
16. Do you know a lot of facts about the environment?			
No, almost none	A few	Quite a lot	Yes, a lot
17. Do you learn about the environment?			
No, not at all	A little bit	Quite a bit	Yes, a lot
18. Would you like to learn more about the environment?			
No, not really	Maybe	I would like to learn some more	Yes, I would like to learn a *lot* more
19. How often do you think about how your community will look in the future?			
Not much	A little bit	Quite a bit	A lot
20. Do you feel like you have some responsibility for taking care of nature?			
No, not at all	A little bit	Quite a bit	Yes, a lot
21. How important do you think it is to have nature in your community?			
Not at all	A little bit	Quite a bit	Very
22. How do you feel when you see other people damaging the environment?			
Fine	A little bit upset	Quite upset	Very upset

23. Do you talk about environmental issues?			
No, hardly ever	Sometimes	Quite a bit	Yes, a lot
24. Do you tell other people how they can take care of the environment?			
No, hardly ever	Sometimes	Most times	Yes, almost always
25. Do you ask other people questions about the environment?			
No, hardly ever	Sometimes	Quite a bit	Yes, a lot
26. Do you feel like you are able to make a difference to the environment?			
No, not really	Maybe	I think I can make a *little* difference	Yes, I think I can make a *big* difference
27. Do you feel like nothing you do will be able to change environmental problems in other parts of the planet?			
No, hardly ever	Sometimes	Quite a bit	Yes, a lot
28. Is nature important to you?			
No, not at all	A little bit important	Quite a bit important	Yes, very
29. Do you eat fruit and vegetables every day?			
No, hardly ever	Sometimes	Most times	Yes, almost always
30. Do you eat junk food (sweets, chips, chocolates) every day?			
No, hardly ever	Sometimes	Most times	Yes, almost always
31. About how much water do you drink a day?			
Less than 2 glasses	About 4 glasses	About 6 glasses	8 glasses or more
32. Do you breakfast in the morning before school?			
No, hardly ever	Sometimes	Most times	Yes, almost always
33. Do you feel tired?			
No, hardly ever	Sometimes	Most times	Yes, almost always
34. Do you do exercise?			
No, hardly ever	Sometimes	Most times	Yes, almost always
35. Do you feel healthy?			

No, hardly ever	Sometimes	Most times	Yes, almost always
36. How often do you get sick?			
Hardly ever	Sometimes	Quite a bit	A lot
37. Do you enjoy learning new things?			
No, hardly ever	Sometimes	Most times	Yes, almost always
38. Do you enjoy challenges?			
No, hardly ever	Sometimes	Most times	Yes, almost always
39. Do you feel confident?			
No, hardly ever	Sometimes	Most times	Yes, almost always
40. Do you believe that there are things you are good at (like singing, schoolwork, art, sport, etc)?			
No, not really	Some	Quite a few	Yes, a lot
41. Do you feel happy?			
No, hardly ever	Sometimes	Most times	Yes, almost always
42. Do you look forward to the future?			
No, hardly ever	Sometimes	Most times	Yes, almost always
43. Do you feel like there are people who care about you?			
No, hardly ever	Sometimes	Most times	Yes, almost always
44. Do you feel like life has a purpose?			
No, hardly ever	Sometimes	Most times	Yes, almost always
45. Do you feel connected to other living things (like plants, animals and other people)?			
No, hardly ever	Sometimes	Most times	Yes, almost always
46. Do you feel satisfied with your life?			
No, hardly ever	Sometimes	Most times	Yes, almost always
47. Do you feel confident speaking English?			
No, hardly ever	Sometimes	Most times	Yes, almost always

Appendix G

Outcomes Questionnaire for Teachers

School:

Workshop/s attended (Date):

Retreat/s attended (Date):

1) Please list other teacher workshops and courses you have attended in the past 5 years and provide a short description of each.

_____
_____
_____
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_____
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_____
_____

2) What do you think were the most significant changes in your personal life that you can attribute to the Earthchild Project workshop/retreat that you attended? Add why you find these changes to be most significant.

_____
_____
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_____
_____
_____
_____
_____

3) What do you think were the most significant changes in your professional life (as a teacher) that you can attribute to the Earthchild Project workshop/retreat that you attended? Add why you find these changes to be most significant.

4) What was the best part of the Earthchild Project workshops/retreat that you attended?

5) What was the worst part of the Earthchild Project retreat/workshops that you attended?

Appendix H

Boxplot Diagrams for Outcome Variables with Outliers

Figure H1: Boxplot Diagram of Learner Scores on the Environmental Attitudes and Conservation Behaviours Scale

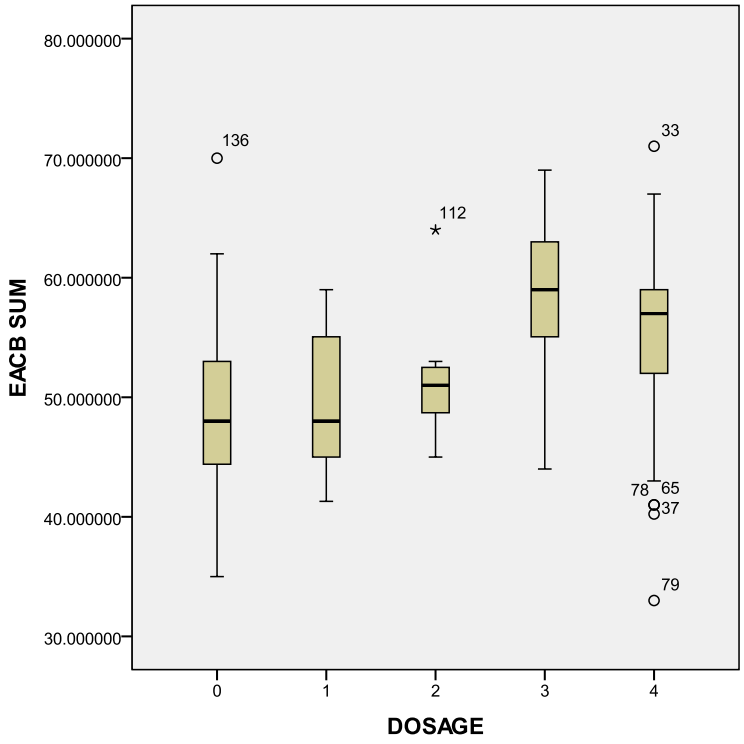

Figure H2: Boxplot Diagram of Learner Scores on the Health Behaviours Scale

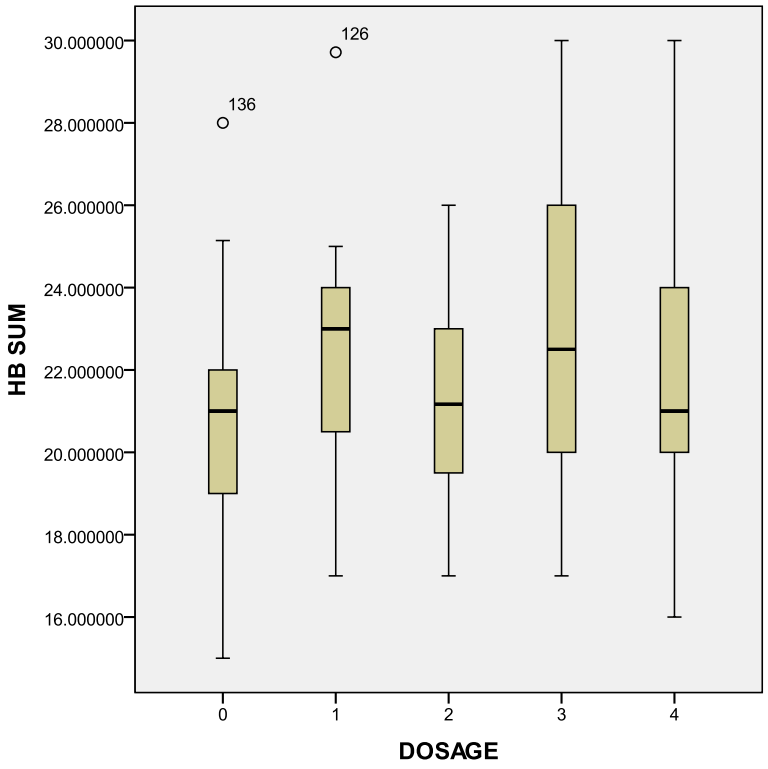

Figure H3: Boxplot Diagram of Learner Scores on the Wellness Scale

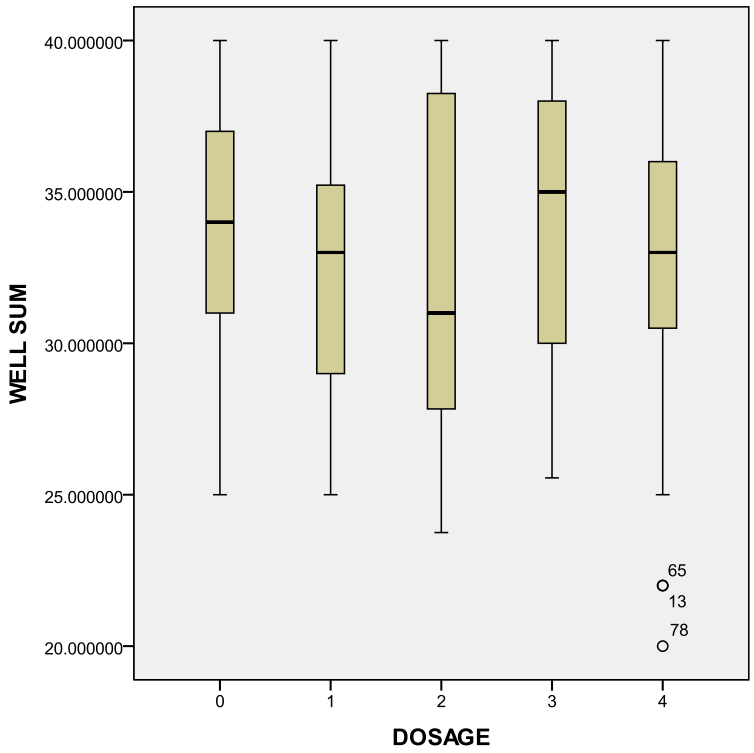

Figure H4: Boxplot Diagram of Learner Scores on the Overall Earthchild Project Outcomes Scale