Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Amber Pierce

A thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy in Education.
The University of Auckland, 2020

Abstract

Student-led, pro-environmental behavioural change initiatives are becoming more commonplace in New Zealand secondary schools. However, there appears to be little research that has investigated perceptions of what 'student-led' entails, how it is enacted and the results of such behavioural change in New Zealand secondary schools. The aim of this research was to investigate student-led initiatives in the context of waste minimisation. How students perceived their roles as agents of pro-environmental change in secondary schools was explored, along with the enablers and barriers they encountered as they led behavioural change initiatives in their schools. The usefulness of behavioural change theories for developing, initiating and reflecting on the success of behavioural change strategies was also explored.

This research used a critical qualitative method with a case study approach primarily utilising focus group discussions and semi-structured interviews with 33 environmental council students and 10 supporting staff members from three secondary schools, to capture their perceptions and experiences as they engaged in a whole-school waste reduction initiative.

A definition of student empowerment comprised of two characteristics was developed and used in conjunction with Arnstein's (1969) Ladder of Participation and Fielding's (2001) Levels of Student Involvement model to capture the complex structural and cultural characteristics that supported and hindered students' perceptions of empowerment. It was found that while students initially believed that they had the means and the power to bring about change in their school, they experienced several barriers that prevented them from bringing about any measurable behavioural change in their school. As a consequence, this research illustrates how historical expectations of and limitations placed on students within schools can impede today's students' attempts to fulfil their role as active and empowered citizens.

Furthermore, this research analysed the usefulness of two behavioural change theories, the Theory of Planned Behaviour (Ajzen, 1985) and Social Practice Theory (Shove, Pantzar, & Watson, 2012), throughout these year-long behavioural change initiatives. Findings indicated that behavioural change is complex, made up of personal, social and contextual influences and, therefore, neither theory is able to capture the intricate nature of student-led behavioural change. This thesis concludes by suggesting a number of real-world and conceptual implications for future research that explores the facilitating of student-led, pro-environmental behavioural change.

Acknowledgements

Table of Contents

List of Figures

List of Tables

Chapter 1: Introduction

> *The Guardian* 14 December 2018 headline: *A youth activist on the climate crisis: politicians won't save us*
>
> (Barrett, 2018)
>
> *CNN* 12 December 2018 headline: *15-year-old climate activists accuses world leaders at COP24 of stealing kids' futures*
>
> (Davidson, 2018)
>
> *In These Times* 12 December 2018 headline: *After youth activists storm their justices, 13 more House members agree to support a green new deal*
>
> (Palleschi, 2018)
>
> *New Zealand Herald* 3 December 2018 headline: *Whangārei students picking up other people's 'gross' rubbish*
>
> (NZ Herald, 2018b)

The above quotes illustrate that it is hard to open a newspaper or scroll through a news website without seeing evidence of young people engaging with today's greatest issues. History highlights the important roles young people have had in some of the greatest social protests of human history, including the 1970s Vietnam War protests, China's 1989 Tiananmen Square Movement and more recently in the United States, the student-led Never Again movement against gun violence and the Indigenous water rights lawsuits hoping to improve water access on Native American tribal lands (Blakemore, 2018). As can be seen by the headlines above, environmental issues and concerns motivate youth around the world to attempt to change not only their peers, but their communities, institutions and governments.

Positive outcomes of youth activists go beyond what they are able to accomplish in the moment of action. Many adults see youth activism as evidence that they are engaging in the democratic process, and thus feel hopeful that youth will grow up to be thoughtful and active in their local and national democratic processes (Harris, Wyn, & Younes, 2010). In addition, youth activism is credited with building youths' critical thinking, organisational and interpersonal skills. One definition of *youth environmental action* describes the process as one where youth and adults "co-create environmental and social change" (Schusler & Krasny, 2015, p. 363). If this definition is to be accepted, then schools are an important place to research, build and promote student activism or, for the purpose of this study, student-led change initiatives. However, as Montgomery and Kehoe (2016) note, schools are more likely to be discussed for their high stake assessment scores, learning outcomes and truancy numbers rather than their success in facilitating students to use their creativity and agency to create a better world.

This research examines how students who already identify themselves as agents of change within their school attempt to influence their peers and staff, and how staff support or hinder the students to make lasting change to both behaviour and school systems. This research will contribute to both theory and practice about how students and staff collaborate in making decisions that students deem important to their school experience. Furthermore, this research will contribute to critique of the usefulness of popular behavioural change theories in a student-led secondary school context.

This chapter presents the rationale for conducting this study. Firstly, a short background to the research is provided in Section 1.1, followed by Section 1.2 which describes the researcher's personal interest in the topic. Section 1.3 outlines the aims of this study. Then, a short summary of the study's research approach is described in Section 1.4. Finally, Section 1.5 provides an outline for this thesis.

1.1 Background to the research

As the world becomes more connected, images and stories of youth expressing their opinions and taking action for today's issues and striving for a different and better tomorrow flood newspapers, televisions and computer screens, as illustrated above. However, what makes these youth committed and capable remains elusive. Student engagement and empowerment research (see Appendix A for a definition) has created a library of definitions, models and policy suggestions, yet much of the research presents authentic student empowerment in simplistic terms, as simple as giving the students an opportunity to ask questions during lessons or vote on proposed changes to school uniform. More qualitative research is needed to generate in-depth findings about the complex nature of student empowerment (see Appendix A for a definition) . Therefore, a pool of knowledge can be created that schools, both typical and atypical, can use to inform their own journey towards teaching and supporting empowered students (see Appendix A for a definition).

In addition, much of the research into changing the behaviour of secondary students, specifically around pro-environmental behaviours (see Appendix A for a definition), has assumed that teachers or adult staff would be leading the initiative. In this way, it is assumed that the people attempting to bring about behavioural change are the same people that make the decisions in the classroom, and to a degree the whole school. Also, much of the current research assumes that teenagers behave in the same manner as adults when responding to behavioural change ideas and initiatives. This research also critiques the strengths and weaknesses of two popular behavioural change theories as I analyse the complex situation of three student-led initiatives, in adult-run educational institutions.

I began this journey interested in how to support students to bring about long-term, pro-environmental behavioural change in their school. I had planned on exploring what behavioural change strategies the students used to bring about a reduction of waste to landfill on their campus. By generating quantitative data on the amount of waste sent to landfill before and after each behavioural change event or strategy, I hoped to be able to investigate how and why a strategy was successful or not.

All of the schools I approached to participate in this study described themselves, both in policy and practice, as actively promoting and supporting student empowerment. Furthermore, only schools that indicated they had student-led environmental council (EC) (see Appendix A for a definition) tasked planning or were running waste reduction initiatives at the time were considered. I believed at the beginning of this study that I would be studying schools that had succeeded in creating systems and a school culture that empowered students, and that much of the discussion would be highlighting the best practice I had seen around supporting student leadership.

However, as Eames, Cowie, and Bolstad (2008) stated in their report on education for sustainability (EfS) in New Zealand, neither national nor school level policies promoting student empowerment and

student-led action through EfS had led to dramatic change in most secondary level classrooms. In a similar vein, my research focused less on the specific strategies that promoted lasting pro-environmental behavioural change in a secondary school, and more on how structural and cultural characteristics within a school enabled (see Appendix A for a definition) students or created barriers to them attempting to bring about change in the school. Therefore, this study has grown beyond the simple objective of answering the question, *How do youth bring about behavioural change in their school?* to *What do schools need to change to enable students to attempt to bring about change within their school*?

1.2   The researcher's interest in the topic

First and foremost, this research came about in response to my journey of self-realisation that many of my personal habits, lifestyle expectations and long-term goals had obvious negative consequences on the environment around me. As a child I remember being told to turn off the lights because electricity cost money, and money did not grow on trees, and not to waste food because there are starving children in Africa, though I argued at the time that I was really saving them because no-one really likes eating peas. It was not until my mid-twenties that I began to realise that my consumption of energy impacted on more than just my pocketbook, and that there was more to food than who was and was not eating it. In attempting to minimise my footprint on the environment, I must be willing to look for opportunities to be more environmentally friendly in every part of my life, including my work and study.

Two additional factors helped me focus my choice of research topic. First was the reactive nature of what I have taught in secondary schools. Instead of shaping lessons in response to what was going on in society and students' lives at the time, I was teaching about what happened in the past, hoping that the knowledge would magically transform into usable information in the future, hardly a quality educational expectation. The second factor was my experience working as a WasteWise facilitator supporting teachers and students bring about pro-environmental change in New Zealand schools.

I taught secondary school social sciences for 15 years, both in the United States as well as in New Zealand. For most of my career, my course curriculum primarily focused on teaching students what had happened and how it changed the world for the better or worse. For the first few years of teaching, textbooks and my own knowledge of course topics were the primary sources of information for my students. However, as the 21st century began, so did the normalisation of youth using the internet as a source of information (D. Levin & Arafeh, 2003). I was witnessing a fundamental change to how youth learned about the world.

What I did not witness was how teachers, including myself, were adapting our teaching for students who no longer needed us to provide all the right answers. Ten years later when I left my last secondary teaching position, I was saddened by the 20th century teaching that I still saw happening, teaching students about the past and ignoring that the internet and social media were informing students about today even before they arrived at the school gate in the morning.

The internet changed what it meant to be a student, and yet I saw that it had only limited effect on what it meant to be a teacher. I believe this disconnect has led to schools failing to keep up with what

students are capable of in today's society. Students can learn about an environmental issue on their Facebook feed, research what is causing the issue, worry about what their future will be like, and then connect and organise action with other youth, all from their home devices. It is my personal belief that schools need to rethink what they have to offer to students, and society. Buildings that teach passive students about the facts of yesterday are no longer needed or wanted by students, communities or governments.

I chose to explore the conditions and characteristics of how to support empowered students in secondary schools quite simply because I saw the problem but did not know what the solution was. I could not tell a beginning teacher how to fully utilise the understanding, motivation and capability of students in a classroom setting. I chose to research ways to bring about authentic student empowerment because my ignorance was part of the problem.

In addition, I chose the specific context of this research project, student-led waste reduction initiatives in secondary schools, in an attempt to address another failure I had experienced. After leaving public education, I took a job as a WasteWise facilitator for schools in Auckland, New Zealand. My role was to support schools and teachers through curriculum support, behavioural change initiatives, and by suggesting changes to schools' waste systems and procedures, to reduce the amount of waste they were sending to landfill.

However, I was again faced with the personal realisation that I did not have the knowledge and understanding needed to help secondary school administrators, teachers, and students succeed. After three years, I had only a few examples of secondary schools succeeding at reducing their waste. Instead, I had many stories of highly motivated, environmentally minded teachers and students who had reported high stress levels, disappointment and disillusionment about being unable to bring about pro-environmental change in their school. I came to believe that without a better understanding of how to bring about change in a school, I was blindly telling teachers and students that they can make a difference, without truly knowing if they could. The WasteWise programme folded due to regional government funding cuts to environmental education programmes three years after I took on the job, leaving few examples of teachers or students being able to bring about whole-school waste reduction behaviours.

1.3 Aim of this research

The aim of this qualitative case study research is to gain an in-depth understanding of what enablers and barriers students leading behavioural change initiatives in secondary schools experience and to critique the usefulness of behavioural change theories for developing, initiating and reflecting on the success of behavioural change strategies. I was interested in understanding if or how students' perceptions of their role as agents of change in the school changed in response to their engagement with teachers and administrators throughout the year-long initiative. I was also interested in how students' attempts to bring about pro-environmental behavioural change could be theorised using popular behavioural change theory.

The following research questions were formulated to understand how to support students bring about long-term, pro-environmental change within their school:

1. What are environmental council students' perceptions and understandings about their role as change-makers (see Appendix A for a definition) within their school?
2. What are major enablers and barriers to empowering students to enact a change initiative within their school?
3. How do environmental council student members enact change to waste reduction practices within their school?

1.4   Research approach

This research followed three secondary schools' ECs as they attempted to reduce the amount of waste the school sent to landfill. A qualitative case study approach was employed to capture the complex motivations, interactions and consequences of students attempting to bring about school-wide change (Yin, 2014).

This study generated data from focus group interviews with EC general student members to capture the motivations, goals and expectations the general EC students had at the beginning of the behavioural change initiative. In addition, EC student leaders also participated in two focus group interviews at the beginning and end of the year-long initiative. Ten staff who were key to the success of the initiative also participated in individual semi-structured interviews throughout the initiative. Relevant documents from both students and the school, as well as observational notes that I took during meetings, informal interactions between students and staff, waste audit data and weekly waste disposal weights were also analysed for this study.

1.4.1   Assumptions

I have used several student participation models, as explored in Section 2.2, as lenses through which to analyse the type and quality of student participation in their school's decision-making process. Due to limited theorising about student-led behavioural change initiatives in secondary schools, this research draws from other contexts such as a workplace, the healthcare sector and tertiary institutions, with the assumption that these different contexts could provide some insight into a secondary school setting.

As a researcher, I started this study with a number of key assumptions:

- EC students, leaders and supporting staff wanted the waste reduction initiative to be student-led and believed the student leadership benefited individual students as well as the school.
- Students' perceptions of empowerment are mental constructions and not tangible elements that can change in response to personal, interpersonal or physical circumstances.
- ECs could not bring about whole-school behavioural change without engaging with supporting staff.

- Teenagers are strongly motivated by perceptions of what is socially expected in communal spaces.

1.4.2 Rationale and significance of the research

Few people question the positive potential for students leading change within their school and that society will benefit from youth attempting to bring about pro-environmental behavioural change. Historically, however, research into both student empowerment and behavioural change theory have focused on theoretical outcomes or people's stated intentions for future action. This type of data generation highlights the possibilities for the future without going into detail about the process or journey. I hypothesised the journey would provide more useful insights into bringing about change both in our schools and our larger communities. There will never be a 100% empowered student any more than there will be a person who acts in a 100% environmentally responsible manner; however, there is value in understanding how to bring about a *more* empowered youth and a more environmentally responsible person.

It is important, therefore, that we identify structural, social and cultural characteristics that lead to students not only perceiving that they have the power to bring about change, but that allow them to bring about actual long-term change. Potentially, in this way, schools can continue to transform from 20th century institutions of passive learning about facts and skills to communities that encourage students to question, plan, and make change, skills that are needed in this century.

1.5 Outline of the thesis

The thesis contains seven chapters. Chapter 1 has introduced my thesis, my motivation and beliefs regarding the role schools have in empowering youth to make positive changes within their schools and the need to critically examine how useful current behavioural change theories are for youth-led initiatives in secondary schools.

The second chapter (literature review) discusses how previous research relating to waste behaviour has contributed significantly to the understanding of pro-environmental behavioural change, while also highlighting the gaps in knowledge about how to bring about long-term behavioural change within specific social contexts such as educational facilities. Next, a definition of student empowerment will be justified for use as an analysis framework. Finally, two popular behavioural change theories that could provide a lens for theorising about student-led, pro-environmental behavioural change initiatives will be explored.

Chapter 3 details the methodology and research design of this study. A description of the sampling technique used for selecting the participants, as well as justification for how and what type of data were generated and how thematic analysis guided the data analysis process, is provided. This chapter also discusses the ethical considerations relevant to this study.

Chapters 4, 5 and 6 present the findings of the study. Chapter 4 presents the findings from Wauconda High School as they attempt to install recycling bins around their school campus (all school names are

pseudonyms). While the EC students reported high levels of motivation and personal agency to bring about change in their school, they experienced structural and cultural barriers that detracted from their sense of empowerment and ability to bring about lasting behavioural change.

In Chapter 5, the findings from Grayslake College are described. The impact of different goals and expectations for students leading change within the school are discussed, along with how these different perceptions impacted on relationships between EC students, leaders and supporting staff. How limited access to critical information and participation in the school's decision-making process impacted on the success of the student-led behavioural change initiative is also outlined.

Chapter 6 presents the findings from Mundelein College. The importance of relationships and informal conversations for building resilience are discussed, as well as how EC leaders' perceptions of their ability to bring about behavioural change impacted on their feelings of agency. Next, the guiding principles and characteristics of this EC's behavioural change strategies are discussed.

Chapter 7 concludes the thesis. A summary of the findings is given and each of the research questions is addressed. A critique of what structural and cultural issues need to be addressed to promote students' perceptions of empowerment are discussed. It is also argued that current behavioural change theories, when used in isolation, fail to appreciate the complexity of social contexts such as educational institutions. This chapter concludes with implications for schools wanting to support authentic student empowerment and offers suggestions for further research.

Chapter 2: Understanding student-led change in schools and relevant research

This chapter situates the topic of this thesis, investigating ways to support students to bring about pro-environmental change within their school, within the literature of student empowerment and behavioural change theories.

The chapter starts by describing why, when the world is focused on the impacts of global environmental issues such as global warming, declining biodiversity and declining natural resources, a study focused on waste behaviour is still important. Then, in Section 2.2, research that attempts to explain the value and the framework for empowering youth to become agents of pro-environmental change will be discussed. Finally, Section 2.3 examines two popular behavioural change theories, the Theory of Planned Behaviour (TPB) and Social Practice Theory (SPT).

2.1 Why are we still talking about waste behaviour?

Climate change dominates today's social and political conversations and is considered by some to be the most pressing issue for behavioural change researchers of the 21st century (Antholis & Talbott, 2010). However, other researchers have suggested that the complexity and enormity of the issue and the uncertainty about what the impacts will be, and when and where they will happen, can be overwhelming and lead to inaction, both from institutional actors and at the individual level (Clayton et al., 2015; Urry, 2015). These factors mean the topic is a particularly difficult one for behavioural change researchers to study (Bulkeley & Betsill, 2005; Giddens, 2009; Urry, 2015).

Waste and issues with waste disposal offer a more easily framed problem for people of all ages. The World Bank (2018) predicts people will dispose of 3.4 billion tonnes of waste a year by 2050. The visual nature of waste, as waste disposal bins can be found in most kitchens, workplaces and communal spaces around the world, means that people are already aware that waste is an issue. For youth, waste behaviour is something they engage in every day, both at home and at school. Issues around illegal waste dumping in their communities, as well as litter on school campuses, mean that they do not need a textbook definition about what waste is and why their lives would be better with less of it.

From a researcher's perspective, waste disposal and reduction behaviour changes can be more easily measured than other contributors to climate change, such as energy reduction or the carbon emissions from food miles. In New Zealand, Waste Management Ltd, the largest waste collection and disposal company in the country, reported $24.8 million profit for 2017 (Underhill, 2018). As can be expected from any large organisation with such a high profit margin, the company keeps detailed records of how much waste they collect from their customers. Therefore, there are data on how much waste most schools in New Zealand are disposing of on a weekly or monthly basis. The widely available quantitative data around waste disposal within schools, when used in tandem with in-depth qualitative data, provide a clear frame of the waste issue for any researcher as well as the public.

Interestingly, most schools that participated in an Auckland Council WasteWise programme between 2005 and 2016 were unaware that these data were being collected by their waste collection company and were only able to calculate how much waste was being generated on campus through conducting their own waste audits, by sorting and weighing a day's worth of waste.

In addition, *The New Zealand Curriculum* (Ministry of Education [MoE], 2007), as well as many local councils throughout New Zealand, have identified schools as critical places of learning about the value of New Zealand's environment and resources (Ministry for the Environment [MfE], 2011, MoE, 2007). Research has shown that learning about waste and environmental issues can also be effectively facilitated by teachers. However, empowered students can also be very successful in facilitating learning and behavioural change, especially when involved with environmental issues (Seidman, 2012; Walton, Helferty, & Clarke, 2009).

2.1.1   Framing the waste issue

Climate change is affecting every corner of the world in the form of droughts, floods, forest fires and more intense weather events of increasing frequency that are changing the lives of plants, animals and humans alike (Myers, Maibach, Roser-Renouf, Akerlof, & Leiserowitz, 2013). At first look, waste management may seem like a very small part of the climate change issue; however, landfills are one of the largest sources of anthropogenic methane emissions globally (Powell, Townsend, & Zimmerman, 2015). New Zealand's landfills account for 6% of New Zealand's total greenhouse gas emissions (GHG) released into the atmosphere each year (Brown & Petrie, 2006). When waste disposal is viewed as part of a consumption cycle, starting with the extraction of materials, then manufacturing, distribution, usage and finally end-of-life management, it becomes clearer that steps taken to divert waste from landfill have broad cumulative effects on global warming (United States Environmental Protection Agency, 2015). These steps can have a positive effect because waste is a by-product of every stage of the consumption cycle; from the discarded earth and rock removed during mineral extraction, to disposal of a product's packaging materials. Figure 2.1 highlights how actions of reusing, recovery and recycling can skip stages in the consumption cycle, thus eliminating the detrimental effects of physical waste sent to landfill, as well as harmful by-products of stages, such as GHG emissions. Some of the common materials we find in our households, such as aluminium cans, highlight the benefits of the reusing, recovery and recycling as found in the inner circle of Figure 2.1. The waste produced from mining bauxite and turning it into new aluminium is substantial, when compared to the opportunity for aluminium to be recycled an unlimited number of times, thus eliminating the emissions or waste from both the extraction stage, including the transportation of raw materials, and much of the production stage all together (Norsk Hydro, 2016).
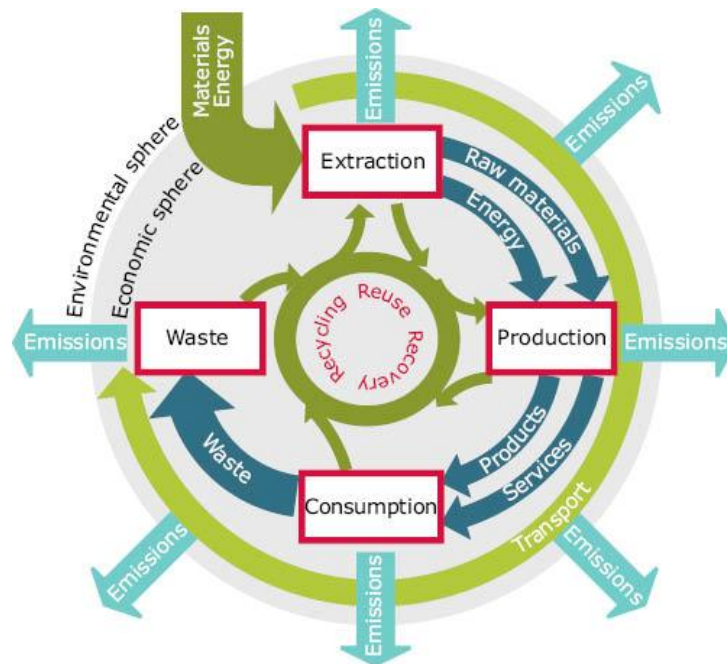
Figure 2.1. Life-cycle chain from extraction through production to consumption and waste (European Environment Agency, 2014, para. 6)

Like many island nation-dwellers, New Zealanders are aware of the damage climate change is having on both the unique natural environment, as well as the agricultural industry in New Zealand (Craig et al., 2000). A report by the MfE (2014) presents a list of how climate change is likely to affect New Zealand in terms of "higher temperatures …, rising sea levels, more frequent extreme weather events such as droughts (especially in the east of New Zealand) and floods" (p. 1). A Colmar Brunton poll in 2018 showed how aware New Zealanders were about the local damage being done to the environment in New Zealand. Of those polled, 75% reported feeling extremely or very concerned about the pollution in the lakes and rivers. Interestingly, while water pollution was reported as the number two concern, below the cost of living, climate change was ranked in seventh place of importance with only 61% of people reporting they were extremely or very concerned about it (NZ Herald, 2018a).

Among many other concerns, the New Zealand Government has identified waste reduction as a key goal for the nation, both in the global fight against climate change and a local desire to use the nation's natural resources in a sustainable way (Auckland Council, 2011). New Zealand produces a large amount of waste each year. In 2011, New Zealanders sent 2.461 million tonnes of solid waste to landfill with Auckland residents being responsible for over 57% of the material (MfE, 2011). With "waste generation closely linked to population, urbanization, and affluence", the Auckland region plays a crucial role in New Zealand's waste reduction goals (Krantzberg, Tanik, do Carmo, Indarto, & Ekdal, 2010, p. 2). As of January 2019, the New Zealand Government has not conducted another national waste to landfill audit. However, Auckland City, which is home to 33% of the population, experienced a 40% increase in waste to landfill between 2010 and 2016 (Auckland Council, 2018). A waste management report released in 2017 stated a city-wide waste reduction goal of 30% per person by 2027, and an aspirational goal of zero waste by 2040 (Auckland Council, 2017). According to Figure 2.2, by 2027 Auckland City's population growth suggests the city may experience as much as a 12.5% increase in waste if current waste disposal amounts are not decreased.

Waste Projections – by population Growth

Legend:
- High popn projection (2.1%)
- Medium popn projection (1.6%)
- Low popn projection (1.2%)
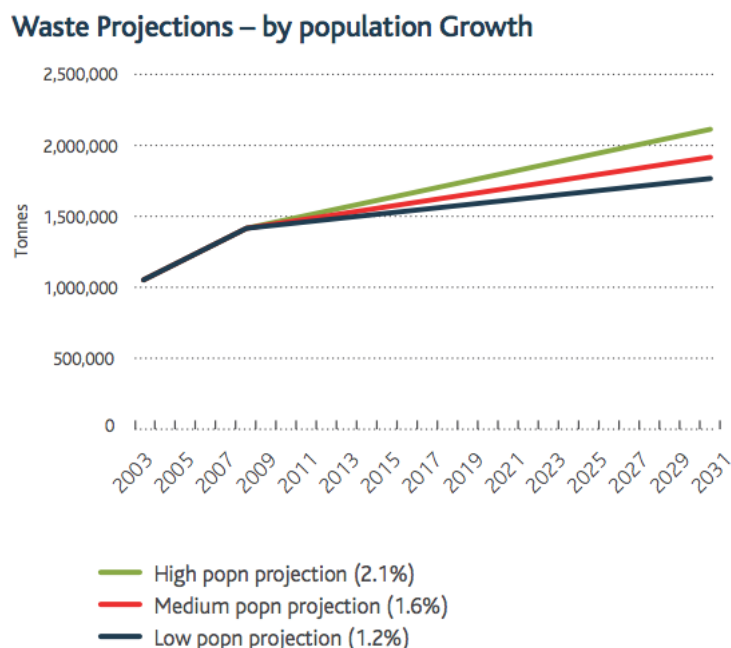
Figure 2.2. Graph showing waste projections by population growth for Auckland (Auckland Council, 2011, p. 64).

Waste is a by-product of every stage of consumerism, and therefore presents critical questions about how to best limit the negative impacts of its by-products on the environment, people and economies (European Environment Agency, 2014). The World Wildlife Foundation published a report in 2012 stating that at the world's current rate of production and consumption, the Earth needs on average 1.5 years to replenish what is consumed in one-year (World Wildlife Foundation, 2012). However, due to population growth, urbanisation and economic expansion, New Zealand needs 2.5 years to replenish one-year of production and consumption (Labowitz & Baumann-Pauly, 2014). Data for 2018 is currently unavailable, but predictions suggest the amount of waste generated per person has continued to increase (Auckland Council, 2018).

2.1.2   Waste reduction: The role of schools

New Zealand's current government has identified schools as having a critical role in achieving New Zealand's waste reduction goals (Auckland Council, 2011; MfE, 2011). Schools, like other public institutions, send a considerable amount of rubbish to landfill each year and have been targeted as organisations that would benefit from waste reduction initiatives (WasteWise Programme, 2015). Also, schools are seen as a means of shaping the nation's youth into environmentally aware and responsible citizens (MfE, 2011). Similar foci can be found at an international level, for example in the aims of the United Nations Global Action Programme (GAP). Aims of the United Nations (UN) GAP include increasing the support and training for educators teaching sustainable development curriculum and empowering and motivating youth to take action (UNESCO, 2016). However, there appears to be limited research examining what New Zealand students understand about waste disposal and reduction, and associated behavioural change strategies.

There are limited data describing how much waste schools send to landfill each year. Despite many programmes around the world conducting waste audits in schools, most of these programmes do not keep records of the waste audit results. However, data from 16 Auckland secondary schools' first waste audits conducted between 2009 and 2015 show on average each school sent 84.79 kg of rubbish to landfill a day, or 16.110 tonnes a school year. With 344 secondary schools in New Zealand, they are clearly important institutions to target with waste reduction initiatives (MoE, 2015).

Another reason governments and waste management organisations have targeted schools is the large number of people that schools can reach with waste reduction initiatives. A report by the New Zealand Parliamentary Commissioner for the Environment (2004) describes how learning "is a process that influences the ways people think, feel and act" (p. 14). In this way, schools could have an important role to play in facilitating pro-environmental behavioural change, specifically around waste disposal practices. Auckland alone has more than 507,000 children and young people living within the city limits (Stats NZ, 2014). In addition to the direct contact students have with environmental education (EE), several studies indicate that immediate family members of students engaged in EE show positive pro-environmental behavioural change (Damerell, Howe, & Milner-Gulland, 2013; Duvall & Zint, 2007). However, there is limited information about how students engage with the waste systems in their school and how they can lead meaningful behavioural change initiatives in their school.

2.2   Thinking about empowering students to bring about change

The United Nations Convention on the Rights of the Child (UNCRC) (1998) states that children have the right to voice their opinions and participate in decision-making processes when the situation is important to them. The report claims adults need to provide a safe place for a child to give his/her opinion, give their opinion weight, and have a voice in a transparent decision-making process.

A recent analysis has provided strong evidence for the high level of importance the UN document puts on child participation, suggesting only through authentic discussion with children can adults hope to understand what a child needs to be happy (Ben-Aryeh, Frønes, Casas, & Korbin, 2014). Ruck, Keating, Saewyc, Earls, and Ben-Arieh (2016) explain that the "notion of well-being and quality of life is rooted in the personal experiences of human beings; children experience life and define their quality of life in a unique way" (p. 18) and therefore provide essential information for any adult attempting to understand and improve the lives of children. Research highlights that children are not citizens-in-the-making, that they experience, learn and evaluate throughout their childhood, making them fully fledged human beings, rather than "human becomings" (T. Lucas, 1998, p. 217).

New Zealand, like many countries today, has included student participation, as stated in the UN Convention on the Rights of the Child, into national educational guidelines. *The New Zealand Curriculum* vision states "young people will be confident, connected, actively involved, lifelong learners" (Ministry of Education, 2007, p. 8). While this curriculum sets the direction for students taking a greater role in their learning and educational facilities, it has, however, left the specifics of what these concepts mean and how the school goes about transitioning from a traditional knowledge and skills focused learning culture up to the school.

It is here, after the governmental guidelines have been published, that the main problem occurs. The problem is that, in many educational facilities, it is left up to adults, teachers and school administrators to interpret how to allow students to participate in their learning (McQuillan, 2005; Seidman, 2012; Walton et al., 2009). This is a process that Ben-Aryeh et al. (2014) clearly point out will not be based on the experiences, expectations and perceptions of students within their school and runs counter to the UNCRC. Therefore, there is space to explore to what extent New Zealand schools allow children to take a greater role in their learning.

2.2.1 Youth engagement: Definitions of student voice, participation and empowerment?

There are many terms being used to describe students having an inclusive role in their school's decision-making processes. Three common terms that are used in educational materials are *student voice, student participation* and *student empowerment* (Mockler & Groundwater-Smith, 2015). While the terms have sometime been used interchangeably, upon closer inspection these terms have very different definitions. All three will now be discussed in turn.

The simplistic term *student voice* has been a favourite among researchers and school administrators alike (Taylor & Robinson, 2009). However, focusing on the actual *voice*, meaning what students have to say about what is going on in their school, is to neglect the power students have to enquire, create and act on their own passions and ideas for the benefit of the school and wider community (Rudduck & Fielding, 2006). Adding to the complexity, and further dashing the usefulness of a simple term, are the expanding fora students can use to express themselves. For example, Waller (2011) highlights the growing importance of social networking in schools, providing ways for students to participate above and beyond traditional face-to-face discourse. As new fora for expression arise, so will the prevalence of multiple voices, such as the difference between public and private voice, or the voice for friends versus that used with teachers (Quiroz, 2001). Beane and Apple (1995) offer another critique of the term *student voice*; the possibility of schools highlighting only the prominent *voices* within a student body, explaining "many schools silence the voices of those outside the dominant culture" (p. 15). Therefore, the term *student voice*, while a very important part of an inclusive school, seemingly puts limits on what is expected and valued from the students.

Unlike *student voice* that refers to how students are encouraged to share their ideas, experiences and opinions, *student participation* refers to a continuum of how much power-sharing is happening between the students and adults (Smit, 2013). Therefore, the term *student participation* does not automatically suggest best practice, as both Hart's (1987) and Fielding's (2001) models show how low levels of participation can often come across as tokenistic, or as manipulation of the students for the benefit of the ideas and actions of the adults (Fielding & Prieto, 2002).

Considering the focus of this study, the term *student empowerment* seems apposite (Duhon-Haynes, 1996; McQuillan, 2005; Perkins & Zimmerman, 1995). *Student empowerment* is based on the idea that students must feel in control of issues that they believe are critical to their position as learners in an organisation (Kirk et al., 2017). Researchers such as Perkins and Zimmerman (1995) and Kirk et

al. (2017) highlight how most schools are currently disempowering students, many from the first day the students arrive in class. First-day activities such as classroom syllabuses that outline what the students will be learning, what tasks they are expected to complete and when the student will be allowed, or required, to discuss set topics, lay the groundwork for a teacher-controlled educational experience (Kirk et al., 2017). However, the focus of this study is not on a school course, but on a student-led extra-curricular activity that has no set guidelines or restrictions imposed on it by *The New Zealand Curriculum* (Ministry of Education, 2007).

For the purpose of this study, *student empowerment* is defined as having two qualities:

1. Students' perceptions that they can effect change (Duhon-Haynes, 1996); and
2. Students' ability to effect change (Mockler & Groundwater-Smith, 2015).

This definition accepts that feeling 'empowered' is not a permanent state of being, and that challenges and barriers can change how empowered a student feels. There is also value in McQuillan's (2005) description of *student empowerment* as having three dimensions: academic, political and social. The relevance of each dimension to this study will now be discussed in turn.

2.2.1.1 Academic dimension

The academic dimension empowers students by allowing them to question what they are learning: "Why does this matter? Who benefits? Who does not benefit? Who decides?" (McQuillan, 2005, p. 4). In order for students to create change in the school, they must have the desire to question the status quo. This notion fits well with the study's focus on student-led initiatives because each of the three ECs selected for the study were looking at the current waste systems and waste culture of the school, critiquing the successes and failures of the systems and then deciding what actions they needed to take to effect change. Researchers such as Fine and Weis (1999) point out that oftentimes a student's ability to question is limited by their supporting adults' willingness to consider that society, their schools and, in some instances, their own beliefs and actions are wrong.

2.2.1.2 Political dimension

The second dimension, political, suggests students have the power to change things greater than themselves. Enacting such change forces students to engage with the formal and informal power structures within their school (Giroux, 1984). Robinson and Taylor's (2013) research into power relations between students and school personnel suggests that there are many barriers for students who desire to enact meaningful change. They found a 'taken-for-granted' culture in the unspoken power structure in the schools that prevented most members of the student body, as well as the faculty, from moving away from the top-down, or teacher-centred, method of governance. Therefore, how students and staff see their role in formal and informal power relations can in part determine the success and failure of a student-led initiative.

2.2.1.3 Social dimension

The final dimension of 'empowerment' is social, which could play a large role in this study. McQuillan (2005) describes the social element as supportive relationships between and within groups. The social context and process of change within a school plays a critical role in empowering students. Having policies and procedures that "promote dialogue between teacher and students, a conversation in which everyone feels safe to speak and all voices are respected" (McQuillan, 2005, p. 643) can provide a setting that fosters empowerment of all people. Another important relationship is the one between peers. Ladson-Billings and Tate IV (1995) suggest that students can learn to support and empower their peers, something needed if student-led initiatives are to succeed.

Despite considerable research abroad analysing the relationships between students and teachers, there have been few studies that look into the specific characteristics, successes and challenges that appear within the New Zealand education system when considering student empowerment. Therefore, there is space to explore how student leaders and key staff perceive their roles and the limitations of students facilitating change within the school, as well as how these perceived roles correlate to the effectiveness of the behavioural change the group of students are trying to achieve.

2.2.2 Theories explaining student empowerment

Many theories have emerged about the best way to promote student empowerment in schools. Four popular theories—democratic, action competence, enlightenment rationale, and empowerment rationale—offer different roles for both students and adults, as well as limitations put on how and what type of participation students play in the decision-making process. The four theories provide a framework to analyse how students engage with adults and peers to encourage pro-environmental behavioural change. An overview of each theory is presented in Table 2.1.

Table 2.1. Four theories of promoting student empowerment

Theory	Key Ideas	Roles	Limitations
Democratic	Citizenship, knowledge, voting, representatives	Students: Learn, voice, vote Adults: Teach, listen, decide	Students do not take action, adults can censor voices, students are not part of the final decision-making process
Action Competence	Knowledge, decisions, action, cross-curricular projects	Students: Choose, learn, take action, reflection Adults: Provide holistic support for student	Requires non-traditional teacher-student roles and school structure, values process not outcomes
Enlightenment Rationale	School is a service provider, individualism	Students: Individual critiques, choice and actions Adults: Listen and accommodate when possible	Not all individuals can be accommodated, students only give feedback to adults, otherwise not part of the decision-making process
Empowerment Rationale	All persons are equal, individualism, activism	Students: Part of decision-making process for all aspects central to their education Adults: Creating an environment that supports what each student chooses	Difficulty creating culture without traditional power hierarchies, each student sets their own outcomes, therefore not comparable to other students or schools

Note: Comparison synthesised from Dewey (1916), Fielding (2011), James (2006), Jensen and Schnack (1997), and Weiler (2008).

Each theory of student empowerment has suggested roles for both adults and students, and advocates when and how students should participate. These roles do empower students to create change within their school. However, while all the above theories focus on empowering students, each offers limitations as to what type of access to the decision-making process is 'good' for students, adults, and the school as a whole. Each theory will now be discussed in turn.

2.2.2.1 Democratic theory

One of the most recognisable theories in Western nations is the democratic theory. As democratic nations profess their commitment to citizens' participation through voting and meaningful dialogue, many have looked to schools as incubators of the good citizens of the future (Dworkin, Saha, & Hill, 2003). A 'democratic' school is not a new concept. John Dewey's (1916) book titled *Democracy and education: An introduction to the philosophy of education* described the need for schools to be a microcosm of the type of society that is desired. Dewey suggests that schools have the power to become something better than what is happening in the wider society. Therefore, any improvement to a democratic society will first appear in the schools before taking hold in the adult political sphere (Dworkin et al., 2003). Supporters of the democratic school theory believe that politically engaged students will become politically engaged adults. The idea of creating 'future citizens' values students and childhood in a very distinct way; namely, what they have to offer as adults (James, 2006).

It can be argued that in light of the complexity of today's environmental problems, seeing students as tomorrow's, not today's, environmentalists seems like a sensible goal to many school administrators (Jensen & Schnack, 1997). Even the UNCRC (1990) states that children need adult guidance and to feel safe as they participate in the decision-making process. However, there is evidence that global issues such as climate change can be overly distressing for young people (Krnel & Naglic, 2009). Several studies have shown evidence of students feeling overwhelmed by environmental fears, while not having the skills to take definitive action. In a 2007 survey of 600 Australian primary school students, 52% worried about the lack of water in the future, thus highlighting the emotional distress that students are already experiencing (Tucci, Mitchell, & Goddard, 2007).

A school with policies based on the democratic theory may allow students some choice in what they are learning, but will insist that knowledge-based action will occur only when they become adult citizens of the greater society (James, 2006). Referring back to Dewey's (1916) ideas of schools as societal models, it could be argued that it is the duty of teachers to educate students about environmental issues, instilling the understanding that as adults they will have a civic responsibility to take action in response to the problems. A group of empowered students may therefore be given the choice of what environmental issue to learn about, study what is working and not working today with the desire to act for the betterment of the environment when they are adults.

However, a growing community of educators have voiced concerns that the democratic theory is based solely on a westernised set of values (Wotherspoon, 2014). For many cultures such as the Indigenous Māori people, Western notions of voting and individual rights differ greatly from their personal histories (Eames & Barker, 2011). It has been argued that democratic systems reinforce the importance of a single identity, pitting minority groups against the larger interests of the whole group (Wotherspoon, 2014).

2.2.2.2 Action competence theory

A theory that expands on the traditional idea of democratic participation is the action competence theory. Jensen and Schnack (1997) describe action competence as the combination of two parts, "an analysis of the nature of environmental problems and an idea of education as something more than academic schooling or behaviour modification" (p. 164). Action competence shares the democratic theory's value of environmental knowledge, but disagrees with the idea that children are not citizens until they are adults, thus promoting the practice of meaningful democratic actions as students (Holdsworth, 2000; James, 2006). Action competence theory builds upon Lucas's (1979) popular definition of environmental education as "education about the environment, education for the environment and education in the environment" (Linke, 1980, p. 102), extending it to include "a fourth component, education for active environmental concern and participation" (Connell, Fien, Sykes, & Yencken, 2014, p. 86). Students go beyond discussing what activism looks like, to actually identifying real issues and taking real action.

Whereas democratic theory values what students will do in the future, programmes underpinned by action competence expect students to attempt, if not succeed, to effect change while still in school. Adults are expected to offer support and guidance in a holistic manner, for example, making

connections to people or organisations that have specific knowledge or skill sets (Eames, Barker, Wilson-Hill, & Law, 2010) Many diverse nations and cultures have created environmental education programmes based on this theory, including the Eco-schools programme popular in Europe and the Enviroschools programme in New Zealand (Eames, Bolstad, & Robertson, 2008).

Despite the popularity of the action competence theory in many school systems, and its tenets being included in *The New Zealand Curriculum* (Ministry of Education, 2007) under the key competency *Participating and Contributing,* some researchers have suggested that secondary schools are failing to create a programme underpinned by this theory (Eames & Barker, 2011; Eames et al., 2010). Issues of how students' days are timetabled into traditional one-subject periods, and how teachers are divided into departments both present major hurdles to a school attempting to offer a cross-curricular action competence programme (Birdsall & Glasgow, 2014). In order to value students' educational choices, such as what environmental issue to learn about, and support students' knowledge-based actions, schools need to break away from the traditional roles played by both teachers and students within the school.

2.2.2.3 *Enlightenment rationale theory*

A further theory that can be helpful in explaining the role of students in bringing about change in a school is the enlightenment rationale theory. This theory suggests that, as with the democratic and action competence theories, schools should represent the wider communities, but from an economic not democratic perspective (Weiler, 2008). The school is seen as a service provider, and the students are the customers (Farthing, 2012). Much like the many expectations customers have when they pay for a service, schools must meet many outcomes to be considered successful, including but not limited to "national exams … training for the work force, to labour productivity, to citizens' understanding of social and cultural values and to enhancing their creative potential" (Le Grand, 2009, p. 65). The relationship between service provider and customer needs to be reciprocal, with the students encouraged to express their wants and opinions about issues within the school, and the school expected to adjust its service where appropriate (Weiler, 2008).

The enlightenment rationale theory values each student's opinions and choices, as they are seen as full citizens, while the adults' duty is to make decisions and take action (Clarke, Newman, Smith, Vidler, & Westmarland, 2007). A school policy based on the enlightenment rationale theory would be "listening respectfully to children, their ideas and helping them feel more empowered …" as well as being "responsive to the child's voice … and honor[ing] children's stated preferences" (Warshak, 2003, p. 374). The school could see an 'empowered student' inside every student; all students are entitled to their own opinions and can make their own choices. It is therefore the adults' place as "keepers of children" to show them that their voice is important, with the added benefit of knowledge gained from a student's perspective that may influence an adult's decision-making (Weiler, 2008, p. 327). Weiler (2008) suggests this theory can be seen as first helping the adults provide the best service possible, with a side-effect of creating a culture that fosters students' feelings of importance and empowerment in the school. A possible critique of this theory is the potential of adults choosing to which group of students to listen (Fielding, 2004). Without adults being aware of their own biases, they may hear the

students that are saying the things the adults wish to hear, leaving minority or extreme voices to go unheard, unheeded and disempowered.

A point of difference between the enlightenment rationale theory, and the democratic and action competence theories, is the importance given to treating each child as an individual (Farthing, 2012). Much like the metaphor of clothes shopping where a 'good' store provides many options for the consumer in an attempt to satisfy each customer's preferences and values, the enlightenment rationale suggests a 'good' school will provide many options for the students. The idea is to create a never-ending cycle, where students see the impact of their voices being heard and their needs being met, therefore expressing their wants and needs even more (Le Grand, 2009).

2.2.2.4 Empowerment rationale theory

Possibly the most radical of student empowerment theories is the empowerment rationale theory (Weiler, 2008). All of the previously mentioned theories focus on means of participation within the limits set by the adults in charge, such as what topics are appropriate for debate and what forums are appropriate and allowed for students to express their ideas and opinions (Robinson & Taylor, 2013). The enlightenment rationale theory believes that children should not just feel like they are being heard but feel they are in control (Warshak, 2003). The empowerment rationale theory also sees the value in open protest and civil disobedience as effective avenues of change. Historically, adults have used this tactic with success in the United States Civil Rights lunch counter sit-ins and the thwarting of the Australian government's plans to construct the Franklin Dam in 1982 (Diggins, 1999).

While the enlightenment rationale theory can be seen to give equal rights to students, there are often issues that arise from such extreme forms of student empowerment, such as time limitations and difficulty in assessing student achievement (Percy-Smith & Burns, 2013; Stokes, 1997; Wilson-Hill, 2010). Percy-Smith and Burns (2013) describe how extreme forms of student empowerment challenge the "overriding ethos of education focusing on the acquisition of skills and knowledge as future capital to plug into social and economic systems", instead of expanding the role and structure of the school to "foster education for human flourishing now – person centred, human scale education, localised, experiential, critical, creative, empowering and action focused" (p. 335). They suggest that the role of schools is not to create a skilful, engaged-in-the-future adult, but to foster a skilful, engaged student now.

The empowerment rationale theory also demands changes in a school's structure, culture and perceived role in order to facilitate the empowerment of students, changes that Birdsall and Glasgow (2014) have found were lacking in the New Zealand secondary schools they researched.

An additional concern about this theory, highlighted by Skivenes and Strandbu (2006), is that children have greater needs than adults. Referring back to the UNCRC (1990), children should not be left without adult guidance and giving total control to a child under the guise of giving that child a voice is argued to be neglectful (Skivenes & Strandbu, 2006). Warshak (2003) specifically argues against allowing children and students to make the final decisions without any oversight from an adult due to how often children do not say what they actually want or want what is really best for them.

The answer to the question of how much control is permissible to give to students is not straightforward. Much of Western education has been dominated by teacher-controlled classroom activities, for example large group discussions, worksheets, and written or oral examinations (Grannis, 1978; Hine, Bhullar, Marks, Kelly, & Scott, 2011). Studies have shown that many teachers report believing students are more on task, and therefore learning more, when the teacher is in control of the activity (Sax, Astin, Korn, & Mahoney, 1999; Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). To add to the confusion, research analysing the success of teacher-centred activities by evaluating the results of traditional, paper-based testing supports teachers' perceptions that teacher-led activities lead to higher student achievement (Walberg, 1990). However, Barrett (2018) notes that while studies that use non-traditional testing are far less numerous, they are showing that student-centred activities can lead to higher achievement on non-traditional testing formats. Without a clear understanding of how much student control is good for student achievement, in whatever form that may take, school staff are left to make their own judgements about the merit of student control in education.

In addition, unlike less radical theories of student empowerment, there is limited research into how a school can support students to take on the strong leadership roles within the school that the empowerment rationale theory requires. There is also a lack of research exploring if extra-curricular activities offer more or less opportunity for students to lead change within their school. The present study could therefore provide insight into what level of support students attempting to enact change outside of a classroom context need from school staff and administrators.

These theories offer ways to identify, organise and analyse the complicated interactions between the students attempting to bring about change in their schools and the adults that support them. However, they do fail to explain how a school can shift from one student empowerment model to another.

2.3   Supporting students to be empowered agents of change

As described in the previous section, there are many terms for how students interact, or do not interact with the decisions being made on their behalf in their school. However, these terms fail to give the reader insight into how to shift from one label to another, for example how does a school move from a traditional democratic model that sees students as containers of valuable information to an enlightened model, where students can lead change in the school?

How schools can envision and take action towards changing how students and adults work together will now be examined. Two student participation models, Arnstein's (1969) Ladder of Participation and Fielding's (2011) Level of Student Involvement, as seen in Figure 2.3 and Table 2.2, are possible student empowerment models. These models were chosen for their assumption that authentic student empowerment is a continuum or journey, as well as their underlying belief that not all actions adults can take for student empowerment are authentic and positive for the student. In addition, both models are centred around the transfer of control from adults to students. Both models will be referenced as possible analysis tools for examining how schools can progress from low to higher levels of student empowerment, as well as examining the potential positive outcomes of having empowered students

leading change initiatives in schools. Finally, the challenges for schools attempting to progress to higher levels of student empowerment will be explored.

2.3.1 What a school of empowered students might look like

For many people, the first step to achieving a goal is to imagine what success will look like. In a similar vein, describing characteristics of what a school of empowered students could look like can offer direction and motivation for everyone involved. Two key characteristics of a school that fosters empowered students include:

1. A structure and culture that supports change implemented by any person/group within the school; and
2. Encouragement of active participation from people of all abilities and roles.

(Fielding, 2001; Hart, 2008)

Arnstein (1969) was an ardent believer that meaningful student participation required a school structure and culture that supported a bottom-up approach of participation. He created the *Ladder of Citizen Participation* shown in Figure 2.3, consisting of eight steps or stages of participation, starting with the most tokenistic at the bottom and rising to what he considered real citizen control. Arnstein (1969) believed the real power of democracy was when the 'have-not' citizens were able to join the decision-making process within all sectors of society. He was critical of what seemed at the time to be the "empty ritual of participation" by many groups within American society (p. 216). While Arnstein (1969) was thinking of how minority groups such as Black, Mexican-Americans and Native Americans were being excluded from holding real power in the democratic system, many educators have found his theory helpful in explaining and expanding the role of students in schools (Fielding, 2001; Herriot, 2013; Warshak, 2003).
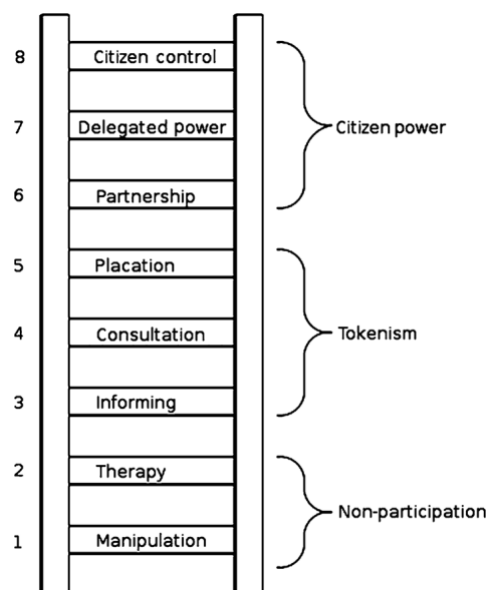
Figure 2.3. Arnstein's Ladder of citizen participation (Arnstein, 1969, p. 217)

When related to a school setting, the top level of Arnstein's ladder describes a process where a student initiates the inquiry but both student and adults work together to make the final decision (Herriot, 2013). This level of teamwork requires not only a culture that empowers people to work successfully with each other, but also a power structure that enables groups of students and adults to facilitate real change within the institution. Herriot (2013) points out a common misconception about the idea of "citizen control" is that endowing "student voice with meaningful authority does not, however, preclude adult guidance and involvement" (p. 38). Therefore, adults must have an empathetic approach to working with students, knowing when to step back and when to assist. Fielding's (2001) model also highlights the need for engaged adults supporting empowered students. He observed that when students were able to prove their ideas had merit and were able to foster cultural changes within their peers, structural changes followed suit. The findings of my research might support Arnstein's ideas that a person or group can create change using a bottom-up approach, but not without support from the people who hold positions of power within the school.

The second characteristic of a school of empowered students is the need for all people to be active participants, even if that means taking less obvious or multiple routes to achieving the goal. Hart (2008) discusses the importance of seeing the ladder as less of a set path, but more as scaffolding, allowing for multiple routes of growth for everyone involved. He argues that people of different abilities, ages and learning styles achieve more when working together rather than in homogenous groups. Wray-Lake, Flanagan, and Osgood's (2010) research into how demographic characteristics affect a person's environmental attitudes, beliefs, and behaviours supports the importance of mixed groups in change initiatives. Their findings showed that older people exhibited higher levels of pro-environmental behaviour, but that younger people demonstrated more authentic concern for the environment. Their research supports the idea that student-led waste reduction initiatives driven by students in a bottom-up approach and by student concern for environmental issues, while supported by adults who hold differing degrees of environmental attitudes and power within the school, could be an effective way to implement change and it would be interesting to explore their idea in a New Zealand secondary school context.

A second model of the levels of student empowerment, Fielding's (2011) *Levels of student (pupil) involvement in school self-review and school improvement*, as shown in Table 2.2, offers a description of both student and adult roles in a school change initiative.

Table 2.2. Levels of student (pupil) involvement in school self-review and school improvement

	Students as data source	Students as active respondents	Students as co-researchers	Students as researchers
Rationale	Teachers need to know about students' prior learning / perceptions of their learning in order to teach effectively	Teachers need to engage students in order to fully enhance both teaching and learning	Teachers need to engage students as partners in learning in order to deepen understanding and learning	Students need to engage with their teachers and peers in order to deepen understanding and learning
How teachers engage with students	Acknowledging	Discussion	Dialogue (teacher-led)	Dialogue (student-led)
Student role	Recipient	Discussant	Co-researcher	Initiators
Example of collaboration	• student attitude surveys • exam & test performance	• school student council • peer-led action groups	• students support school-based action research by staff	• student-led review of life skills programme

(Fielding, 2001, p. 136)

Fielding's model goes beyond Arnstein's in that it attempts to answer the question: What benefits are there for increasing the level of student participation in a school? Fielding's lowest level, *Students as data source*, is similar to *student voice*, where a singular act of allowing a student to express their opinion is considered an act of participation, in that students have critical knowledge that an adult should know, but nothing more to offer. Teachers and school staff may consider students socially or cognitively unable to engage in useful discussion, planning or decision-making (Robinson & Taylor, 2013). As can be seen in Figure 2.3, higher levels of student participation enable a school to utilise students' drive to make change, taking the lead role in evaluating a problem and researching solutions. Fielding suggests that his model offers a clear argument and pathway for schools attempting to re-structure their school into an educational facility that actively promotes learning as a shared responsibility between teachers and learners (Fielding, 2001).

A noticeable gap in both Arnstein's and Fielding's models is the failure to explain what roles supporting adults have when students wish to go beyond discussion and decision-making to actually taking action for change. If either model was used as a sole guide for a student-led behavioural change initiative in school, then it could be assumed that the role of supporting adults ends when the students participate in the decision-making about what action should be taken. Any actual action, reflection, success or failure that the students encounter post decision-making is of no concern to adults. This study hopes to address this gap by following the students through the entire planning and actioning of their student-led initiative and provide a detailed analysis of how adults supported students throughout the stages of the initiative.

2.3.2 The drivers of student activism

It is important to understand and document factors that are driving students to become environmental activists. Today's secondary school students have an unprecedented amount of information at their fingertips (McKay, 2010). It would be shortsighted to expect that students engaging in environmental activism are doing so solely because of what they have been taught to do by their parents and teachers (McKay, 2010).

McKay (2010) describes the importance of formal media, for example news programmes or documentaries, for educating older generations, versus the importance of informal media, such as Facebook, blogs and Twitter, for educating today's students. Young people are engaging with social media and this is driving their activism. Swann (2014) describes how social media can "provide unsolicited information about the issue, answer questions from the information seekers, provide emotional support, offer calls for action, and build conflict through complaints or criticism" (p. 227). A growing body of literature argues that often the personalised and emotional appeals that are popular social media strategies are a potential cause of why young adults, while less knowledgeable about environmental issues, are becoming more concerned about the environment than their older counterparts (Stieglitz & Dang-Xuan, 2013; Wray-Lake et al., 2010). For example, Stieglitz and Dang-Xuan (2013) reviewed 165,000 Twitter tweets analysing what type of post goes 'viral'. The findings showed that content that "evokes high-arousal emotions (for example awe, amusement, anger, anxiety) is more viral, while content that evokes low-arousal emotions (for example sadness) is less viral" (Stieglitz & Dang-Xuan, 2013, p. 224). Furthermore, studies have shown that young adults are experiencing a high degree of distress about the environment and, consequently, today's youth are being motivated into environmental activism not only by gaining environmental knowledge but also from a growing fear and pessimism about the future (Hicks, 1996; Ojala, 2012; Tucci et al., 2007).

Studies such as these highlight not only the different sources from which students are getting information, but also the way they are interacting with the information. Today's students are also engaging with platforms that are actively attempting to motivate them into action (e.g., Generation Zero, UK Youth Climate Coalition, Environmental Children's Organisation). The term "*emotional hotspots*" has been used by some researchers to describe the highly emotive tone of the current media forums (Ojala, 2016, p. 6; Pettersson, 2014).

Researchers have also begun to examine the consequences of environmental discussion being overwhelmingly alarmist or doomsday scenarios on youth activism (Ereaut & Segnit, 2006). While some might think that today's youth are being overtaken by a cloud of despair and fear for the future, some evidence shows that these traits are exactly what is making today's youth such enthusiastic and active environmentalists (Ojala, 2008). With evidence such as that provided by Albert, Hurrelmann, and Quenzel's (2010) reporting that two-thirds of the 2,604 German students surveyed believe climate change threatens human existence, research into the effects of hope and worry about environmental problems on students' frequency of pro-environmental behaviours is becoming a popular research topic (Ojala, 2012). Ojala's (2008) study suggested there is a link between young people who described themselves as highly worried about environmental problems and taking action in response

to their concerns as these young people's worries showed a positive relationship to pro-environmental behaviour. Based on Ojala's study, it seems that having high degrees of worry leads to a greater likelihood to engage in pro-environmental behaviour. However, more recent research suggests that, beyond worry, young people must also perceive that they have the agency to take pro-environmental action and that the actions will make a difference (Li & Monroe, 2017).

Despite the growing amount of research about students' concerns, beliefs and knowledge of environmental issues, there is limited research on what impact student-led, pro-environmental behavioural initiatives have had on change in schools. However, studies that examined successful initiatives in higher education and the participation of student groups in community or global initiatives could offer useful insight into what this study might find in Auckland's secondary schools.

A large study of successful, student-led, climate change initiatives at 65 Canadian university campuses gives eight examples of successful initiatives (Walton et al., 2009). The single greatest characteristic of a successful initiative was a shared power relationship between the student group and campus stakeholders. Successful strategies such as socialisation, where student activists interacted with their peers through organised events and social media, were found to be vital as a means of spreading the "Why should we change?" message. Peer-to-peer awareness-raising was found to be the most successful means of communication for all but one of the campus initiatives analysed in the study. Walton concludes his study with the observation that other universities were copying several of the documented initiatives.

Further evidence is provided by Lucas's (2013) assessment of seven American state-wide environmental youth programmes. Again, his study focuses mainly on the contribution of students enrolled in higher education institutions; however, the programme was also open to secondary students. This was important because Lucas identified two elements for successful programmes, the first being the importance of employed adult assistance. Lucas noted the lack of long-term stability of students engaged in the programmes. As students graduate, transfer schools or need to focus on their studies/work, the employed adult ensured that communication and institutional knowledge endured from year to year.

A second key element N. Lucas (2013) identified was the need for students to possess crucial skills, such as social media know-how, and knowledge about the environmental problem that the group is trying to tackle. For the state-wide environmental youth programmes Lucas analysed, many key tasks within the programme, for example financial manager, public relations, and strategic planning, were usually taken on by interns or university alumni. Therefore, the programmes were able to retain crucial institutional knowledge.

Both Walton's and Lucas's studies offer anecdotal stories of how youth may lead a change initiative; however, neither study is set in a secondary school context. While there may be some similarities in the successful behavioural change strategies students use in secondary schools, universities and outside youth-led organisations, a secondary school has significantly different institutional goals, power structures, and potentially different beliefs about what students are capable of, all of which

could have significant effects on the success or failure of a student-led change initiative. Therefore, there is scope for exploring youth-led change initiatives in a secondary school context, as this study intends to do.

2.3.3 Challenges for student-led change

Student empowerment requires changing not only the structural setup of a school's decision-making process but also the dynamics of power between groups within a school (Herriot, 2013). Many researchers have suggested that, while many students and school faculty have expressed the desire to lead change initiatives in their school, there are many challenges that they still face, such as positive power-sharing relationships between students and faculty's limited ability to change school policy (Fielding, 2011; McQuillan, 2005). Beattie (2012) describes many Western nations' secondary school systems as "founded on an industrial era model … Students tend to be passive recipients of their education … uniformity and obedience are highly prized by adults" (p. 158). This presents a difficult setting for the growing popularity of meaningful student involvement in schools (Lodge, 2005).

Issues of how to successfully share power between teachers, administrators and students, determining which group of students is allowed to influence change, as well as how much and what type of change students should be able to influence, are hardly simple challenges to solve. Cook-Sather (2002) suggests that two things must happen before students can take an influential part in school decision-making; the first being "changing the structures in our minds that have rendered us disinclined to elicit and attend to students' voices"; the second "changing the structures in educational relationships and institutions that have supported and been supported by this disinclination" (p. 4). Cook-Sather's research, however, does not go into detail about how a school might bring about these changes. As has been noted previously in this chapter, much of the research into student empowerment focuses on *what not to do* and *what to do* and fails to go into detail about how a school can transform itself. This study aims to address this gap by generating a detailed description and analysis of how a school tackles these structural issues and what, if any, effect these structural changes would have on the success of students attempting to create pro-environmental change within their school.

2.3.3.1 Power-sharing: Not a simple task

School change is not an easy task, especially when there are many stakeholders that desire to have a voice in what and how changes are made (Lynch & Lodge, 2004). Complicating matters is the fact that power is a finite resource in schools, therefore power-sharing means more than extending power to students; it also means limiting the power that has traditionally been held by the adults (Robinson & Taylor, 2013). How a school deals with the challenges of promoting and supporting empowered students will have lasting effect on the change success and sustainability of change initiatives in the school.

Recent researchers of student empowerment generally agree that there have been few secondary schools that have succeeded in bring about sustained student-adult power-sharing within a school

(Mockler & Groundwater-Smith, 2015; Taylor & Robinson, 2009). Not everyone can be a leader, therefore, schools need not only to decide they want to share power with students but decide with which students to share power.

Leadership can be seen as when a person in a group shows significant influence over other group members (Schneier & Goktepe, 1983). This definition suits the traditional school leadership structure (Wallach, Lambert, Copland, & Lowry, 2005). In this commonly seen system, key people such as principals and assistant principals have played an important role in school management and decision-making in 20th century schools in terms of curriculum and how the school day is structured and managed (Wallach et al., 2005). However, this structure makes it difficult to apply an idea of power-sharing within a school. How can everyone be influential? Lodge (2005) suggests that many schools and governments take a simplistic view of power-sharing in schools by creating formal routes and roles that label some students as leaders, for example student councils or student representatives. However, Robinson and Taylor (2013) described power as a "hidden domination", or unspoken assumptions that some topics, places, and structures within a school are not up for discussion with students, such as purchasing and hiring decisions (p. 38). By not addressing this hidden domination, schools can fail to anticipate the real difficulties that arise from attempting to rebalance "power inherent in learning and in relationships" (Robinson & Taylor, 2013, p. 128).

Researchers have also noted the added complexity of how a "systematic and unreciprocated transfer of power" can appear oppressive to teachers (Marion, 1990, p. 50), thus creating a situational paradox where a school is attempting to create a power-sharing culture between teachers and students within a larger, power-exclusive organisation that delegates a top-down hierarchy of power (Young, 2011). One problem that arises from an institution taking a simplistic view of power-sharing is the assumption that only some people in the organisation need to power-share, e.g., teachers and students, but not administrators or support staff (Young, 2011). One example of a top-down approach to power-sharing was the United Kingdom's Department of Education and Skills' (2004) extension of the terms "powers being shared" or "delegated" (p. 6) to students. This was a decision that was administered itself in an authoritative manner, in which teachers were being directed to be less authoritative and share power, which contradicts Arnstein's bottom-up approach (Young, 2011).

An additional problem that schools deal with when attempting to rebalance, or change the power relationship within a school, is the general acceptance of the established power hierarchy (Lynch & Lodge, 2004). Lynch and Lodge (2004) highlighted how both teachers and students reported feeling that teachers are supposed to be in charge and students are supposed to learn. Traditionally, a student voicing opposition to decisions made by adults in a school was seen as misbehaviour (MacBeath, Demetriou, Rudduck, & Myers, 2003). Students may have faced negative repercussions for voicing their opinions, and teachers may have felt they were being criticised. Therefore, it is not only the school administration and teachers that need to learn to share power, but students as well. There is limited research that analyses how to support students and teachers to successfully communicate their needs, expectations and concerns about participating in authentic power-sharing relationships in schools and it would be interesting to explore these communications in New Zealand schools.

2.3.3.2   The difficulty of identifying student leaders

How student leaders are selected can also affect how the students feel about their potential to lead change and their peers' desire to be part of the change. Additionally, adult influence, whether direct or indirect, can reduce the influence elected students have on their peers. Sears, Peck, and Herriot (2014) found that many students viewed peers who participated in student government or councils as "toeing the administration line" (p. 11). Andersen's (2011) study supports this rejection of elected student leaders, noting that they often fail to represent the wider student body. Andersen argued that far from student governments and councils being made up of a wide variety of student groups, the students involved tended to be a specific type of student, for example of high academic standing, or from a few social groups within the school. With reference back to Schneier and Goktepe's (1983) definition of what it means to be a leader, student governments and councils that are perceived as tokenistic or unrepresentative will not have the influence over others that is needed for leaders to lead.

It is difficult to decide which students are capable of leading, have peer support, and are driven to make positive changes to a school. Traditionally, many schools have chosen to follow a democratic process of nominating, campaigning, and electing students to student government or council positions. However, even the seemingly transparent act of elections can become muddled in the power hierarchy of a school system. Robinson and Taylor's (2013) case study analysis of two secondary school elections found that neither students nor teachers felt that the choice of students to run in the school election was beyond teacher control. A teacher stated, "It just came naturally to choose who to be involved [in the election], it's what we do, we use our judgement to choose who we think is the most suited" (p. 38). In confirming this reality, one student said that, "I suppose we didn't really question the fact that staff chose us to be involved [in the election], that's just what we're used to in school" (p. 38).

Interestingly, a study evaluating student participation in different school areas, such as classrooms, co-curricular activities, and informal spaces such as school courtyards, noted that the diversity of students voicing their opinions, perceiving that they were having an influence within their current contact and being willing to work with others, correlated with the influence of teachers on the specific area (Graham, Truscott, Simmons, Anderson, & Thomas, 2018). This study showed there was a greater diversity in the types of students participating in spaces that had less teacher control. This highlights the dilemma of adults having a role in choosing student leaders. Most of the current research examines the negative impacts of adult interference and there is limited research that examines what actions would have a positive effect on selecting students to lead other students. This study will address this gap and explore the impact of teacher control during non-classroom time, when the ECs meet, and therefore may offer some insights into how teachers may support, and not control, students outside of the formal classroom space.

Brinkhurst, Rose, Maurice, and Ackerman (2011) offer some insight into how schools can 'choose' a diverse group of student leaders. They use the term "middle-out change", suggesting there are often many students or groups of students who desire to take the lead in various change initiatives (Brinkhurst et al., 2011, p. 345). They note that the key to success is that teachers, who are noted to

be connected to the people who hold power within the school, must offer support wherever possible. This goes beyond teachers supporting 'high fliers' or 'outstanding' students, to include teachers assisting any student who wants to create positive change. As previously noted, a passionate student has little chance of fostering lasting change without support from people in traditional positions of power, and people in traditional positions of power have a poor track record of choosing students to lead lasting change. Middle-out change highlights the unique position teachers are in to identify passionate students and connect them to the right powerful people in the school. Unfortunately, Brinkhurst et al. (2011) have only analysed this model in university settings and it is possible that the differences in power structures between universities and secondary schools will change the success of the "middle-out change" model. The findings from my study could offer insights into how secondary schools choose their student leaders, and what effect this has on their ability to lead students.

2.4 A deceivingly simple question: How can we bring about behavioural change?

Behavioural change theory has been dominated by two different fields, psychology and sociology. At one end of the spectrum, psychological studies have argued the need to focus on the individual, as people are biologically programmed to think and therefore act in ways that benefit the self (Hardeman et al., 2002; Jackson, 2005). At the other end is the sociological view, that sees human beings as reacting to the environment they are in and thus requires researchers to consider social and physical characteristics of a place when attempting to understand behaviour (Reckwitz, 2002; Shove et al., 2012).

For the purposes of this study of analysing student-led, pro-environmental behavioural change initiatives in secondary schools, a prominent theory from each end of the spectrum has been chosen. First, the TPB is examined, with its assumptions that the individual should be the focal point of any behavioural change research. The second theory, SPT, has been popular with social scientists who consider a person or cohort of people only one part of a dynamic, unstable context of practice or behaviour (Shove, 2010). While both theories have found strong support with environmental activities and groups attempting to bring about large-scale, pro-environmental behavioural change, researchers from all spectrums of the social sciences agree that neither theory has yet provided clear evidence to definitively answer the question: *How do we bring about behavioural change?* (Hargreaves, 2011; Twist, 2018; Ungar, 1994). Each of the theories will now be considered.

2.4.1 Theory of planned behaviour

Waste reduction goals, whether set by international organisations or local councils, are based on the idea that individuals can and will change their consumption and disposal habits (Meinhold & Malkus, 2005). One of the theoretical models most widely used over the last 40 years to explain behaviour change has been the TPB (Ajzen, 1985; Hargreaves, 2011). This theory evolved from rational choice theory that assumes all human behaviour is a consequence of personal, rational decision-making intended to maximise personal benefit (Armitage & Conner, 1999; Jackson, 2005). Thus, it is up to

researchers to identify what type of information a person needs to choose a desired course of action (J. Levin & Milgrom, 2004). The TPB built upon rational choice theory in two ways:

1. An individual must perceive that others want them to behave in such a way, described as Attitude;
2. An individual must believe they have the ability to act upon the decision, described as Perceived Behavioural Control (Ajzen, 1985).

The TPB gained popularity in the mid-1980s and has continued to be used as a guiding theory for behavioural change education and governmental policy today (Sniehotta, Presseau, & Araújo-Soares, 2014; Steinmetz et al., 2016). The TPB has two additional variables, personal attitude toward the behaviour and perceived behavioural controls, that were promised to explain how seemingly irrational decisions actually made sense (Twist, 2018). Using the TPB model, researchers have studied a multitude of factors that influence people who demonstrate a high level of pro-environmental behaviour. The research to date shows myriad characteristics that may help determine if a person is more or less likely to act in an environmentally responsible way (Biswas, Licata, McKee, Pullig, & Daughtridge, 2000; Grønhøj & Thøgersen, 2009; Stern, 2000).

Ajzen (1985) presented his model as a linear progression of beliefs, intention and behaviour, as shown in Figure 2.4. "The immediate causes of human social behaviour are neither mysterious nor outside conscious awareness. Behaviour is performed not automatically or mindlessly but follows reasonably and consistently from the behaviour-relevant information available to us" (Ajzen, 1991, p. 438). According to Ajzen's explanation of human behaviour, people are in total control of their behaviour, no decisions are made due to habit or social pressures. Thus, if pro-environmental beliefs and intentions could be identified, then the TPB suggests that pro-environmental behaviour will follow (Hargreaves, 2011). However, this theory depends on people acting rationally and independently of social factors (Jackson, 2005).
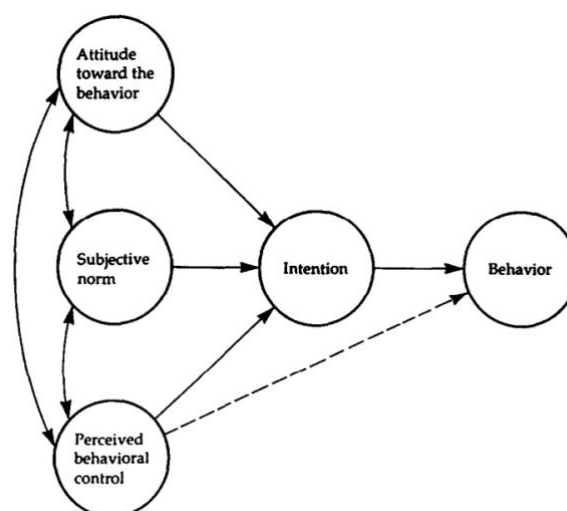
Figure 2.4. Theory of planned behaviour (Ajzen, 1991, p. 182)

The TPB model makes two hypotheses (Jackson, 2005). The first hypothesis is that if a person wants to do something, then the only thing that can hold them back is their uncertainty about whether they can succeed. Jackson gives the example of a person wanting to grow a vegetable garden. If the TPB model is followed, the motivated person must then believe he/she has the knowledge to grow the vegetables before they will actually begin the garden. The second hypothesis is that only when a person misjudges their level of control of the situation, possibly due to learning false information or an incomplete skill set, will he/she fail to accomplish their goals (Jackson, 2005; Sniehotta et al., 2014). Outcomes of studies using the TPB should therefore indicate what beliefs, attitudes and skill sets are necessary to achieve a desired behaviour, allowing governments, marketing firms and education institutions to teach in a way that would lead to pro-environmental behaviour (Dunn, Mohr, Wilson, & Wittert, 2011; Hargreaves, 2011).

While the TPB is a behavioural intent model and not a behavioural change model, Ajzen and many other researchers and people that have designed behavioural change programmes believed intent was the best indicator of behaviour (Dunn et al., 2011; Hardeman et al., 2002; Vermeir & Verbeke, 2008). Therefore, while the TPB is not a behavioural change theory it has been used to design and evaluate behavioural change initiatives and thus it will be a worthy theory to examine in this studies student-led school change context.

2.4.1.1 Common factors in TPB research

Previous TPB research findings about what factor(s) influence a person's environmental behaviour do not provide straightforward answers. Commonly researched factors include demographic variables such as age, gender and educational achievement and internal variables of environmental knowledge and attitude (Kollmuss & Agyeman, 2002). Each study alone fails to show a concrete way forward for lawmakers and educators wanting to create a society of environmentally responsible people. However, some studies could illuminate the complicated puzzle of variables that influence what people are thinking, feeling and doing around the environment (Hargreaves, 2011).

Demographic variables

In the case of demographic variables, two stand out as being predictive indicators of a person's frequency of pro-environmental behaviour: gender and age (Kollmuss & Agyeman, 2002). Surveys such as that conducted by McStay and Dunlap (1983) reported that in both the general public and within the environmental fields, women scored modestly higher levels of concern about retaining the health of environmental habitats. A more recent study looked at how different genders in 22 nations acted in response to the environmental concern (Hunter, Hatch, & Johnson, 2004). The researchers found that women tend to express their concern through everyday pro-environmental behaviour such as purchasing environmental responsible products or recycling, whereas men show a higher tendency to express their concern by influencing others, e.g., voting, changing policies (Hunter et al., 2004).

Another demographic variable that has been the topic of significant study is how age affects environmental concern and behaviour. A study comparing the pro-environmental behaviours of 1,604 American adolescents and parents found that adolescents were less likely to commit to pro-

environmental behaviour despite reporting higher positive environmental attitudes (Göckeritz et al., 2010). The study suggests that significant "life-stage barriers" hinder adolescents from taking more direct pro-environmental behaviour, not a lack of concern (p. 420). Similarly, another study looking into recycling behaviours in the home found that, of the 358 people surveyed, women between the ages of 31 and 45 years tended to initiate a recycling system in the household, while young people needed to be persuaded to use the new recycling system (Meneses & Palacio, 2005).

While considerable research indicates demographic variables can be predictors of the frequency of pro-environmental behaviour, the arguments become less conclusive when combined with other factors (Conner, Godin, Sheeran, & Germain, 2013). Hunter (2004) described how gender was an indicator of pro-environmental behaviour, but he also stated that the socioeconomic status of the female participants seemed to have an effect on their behaviour as well; an indication that factors such as social context, physical setting, and rules or regulations may play a persuasive part in a person's decision to behave in a specific manner.

Internal variables

Internal variables include a person's "motivation, environmental knowledge, awareness, values, attitudes, emotion, locus of control, responsibilities and priorities" (Kollmuss & Agyeman, 2002, p. 240). The often quoted meta-analysis of 315 studies by Hines (1984) concluded that the strongest predictive internal variable for environmental concern was the amount of scientific knowledge the students claimed to have. More recent studies, such as Levine and Strube's (2012) study of environmental literacy and behaviour among 90 American undergraduate students, support Hines's conclusions about the importance of knowledge as a predictor of pro-environmental behaviour. However, Strube concluded that knowledge can impact on behaviour without changing a person's intention, or knowledge can change or create pro-environmental habits without changing attitude, contradicting the linear TPB model. It was also identified that young people hold a growing amount of misinformation about environmental issues.

Much of the current research on pro-environmental behaviour pays particular attention to the predictive value of a person's environmental attitude on the frequency of pro-environmental behaviour (Hargreaves, 2011; Kollmuss & Agyeman, 2002). A study that surveyed 720 people in six nations showed a consistent association between environmental values and a positive attitude towards environmentalism (Schultz et al., 2005). However, demonstrating that values and attitude lead to pro-environmental behaviour has proven more difficult (Gifford, 2014). Some researchers have shown that how a person sees their place in a society, either pro-self or pro-social (as an individual or part of the group), can affect how a person who values the environment takes action for the environment (Hine, Gifford, Heath, Cooksey, & Quain, 2009). As with the demographic variables, difficulties emerge when multiple variables, for example values and attitudes, are evaluated. Gifford points out that while it may be clear to analyse a person's environmental values, other values such as political leanings, value in technology and specific economic systems, have been shown to be relevant in predicting the frequency of pro-environmental behaviour (Gifford, 2014). One thing that is almost universally found in studies on the influence of internal variables on environmental concern and behaviour is that any

variable is only part of a bigger picture of what motivates a person to act or not act for the environment (Kollmuss & Agyeman, 2002; Sniehotta et al., 2014).

2.4.1.2 TPB limitations

Despite the popularity of the TPB, there has been a growing number of researchers suggesting that the TPB is not a useful model for explaining the relationships between the variables involved in behaviour change and pro-environmental behaviour (Hargreaves, 2011; Sniehotta et al., 2014; Stern, 2000). Most TPB research has been aimed at identifying factors of behaviour and very few studies have used the TPB to develop interventions and facilitate change, thus limiting the usefulness of the TPB in the field of behavioural change (Hardeman et al., 2002). Researchers have also noted that the TPB model fails to take into consideration unconscious influences on a person's decision-making process (Conner et al., 2013; Heath & Gifford, 2002; Steg & Gifford, 2005). These drawbacks will now be discussed in turn.

Perhaps one of the most condemning criticisms is how the TPB fails to theorise how to change behaviour (Sniehotta et al., 2014). Instead, it attempts to describe existing behaviours and lifestyles, part of which makes the theory so popular with marketing research (Hargreaves, 2011). Shove (2003) argues that far from providing evidence of how to change behaviour, the TPB legitimises unsustainable social conventions, promoting the importance of decision-making as an independent process without thought of social relations or context. The theory's dependence on analytic truths, or total dependence on the study's participants to state what they believe to be true, without requiring synthetic truth or observable evidence that the stated truth is what happens in the universe outside the participant's mind, mean the researcher's findings cannot be tested and therefore the TPB fails to measure up to the standards required of a *"good theory"* (Ogden, 2003, p. 427). Being unable to use research outcomes to create programmes, laws and interventions highlights how the TPB lacks utility for researchers, lawmakers and educators attempting to facilitate pro-environmental behavioural change (Sniehotta et al., 2014).

It has also been argued that the simplistic linear model on which the TPB is based fails to take into account the unconscious influences, emotions, and social and physical contexts that can affect a person's actions (Sniehotta et al., 2014). For example, people's tendencies to selectively perceive information, based on whether the new information supports or contradicts existing "values and mental frameworks", suggests the limitations of learning scientific facts as a possible way to change a person's behaviour (Kollmuss & Agyeman, 2002, p. 254).

Another concept that the TPB fails to acknowledge is that of involuntary, habitual and semi-automatic behaviours. Studies that look at neural activity show that physical action can happen before recordable, neural decision-making evidence can be measured (Adolphs, 2002; Libet, 2006). Researchers attempting to understand how and why adults respond to an infant's cry have suggested that there is a 'dual stream' of brain activity that happens when a person is presented with certain types of situations; first, a process of identifying the stimuli and then a slower process of detailed appraisal (Adolphs, 2002; LeDoux, 2000). This theory has been used to explain why a mother will seemingly instantly reach for her crying child before actually knowing what the child wants. While little

research has been done into how this type of brain activity impacts on waste disposal behaviour, it does suggest that pro-environmental behaviour that can be considered habitual, such as disposing of rubbish in a bin, is not a totally reasoned response, and therefore not an appropriate behaviour to be studied using rational thinking theories such as the TPB.

In addition, the TPB fails to take into account the social context as potentially affecting behaviour (Steg & Gifford, 2005; Stern, 2000). An evaluation of several environmental behavioural studies concludes that, in some instances, the surrounding social context supersedes cognitive factors, such as the economic cost or persuasive advertising (Stern, 2000). While there is extensive research into how these social influences impact on adolescents' decision-making differently from that of younger children and adults, there is limited research about how the power of peer pressure influences pro-environmental change initiatives such as a waste minimisation initiative (Fuhrmann, Knoll, & Blakemore, 2015; Knoll, Magis-Weinberg, Speekenbrink, & Blakemore, 2015).

In contrast, other studies show that some people take action that cannot be described as in their self-interest or what is expected by others within their social context (Dovidio, Piliavin, Schroeder, & Penner, 2017; Schwartz, 1977). Competing theories, such as ecological value theory and Schwarz's Norm Activation Theory, suggest that a person's understanding of cause and consequence of their own behaviour, as well as perceptions of being responsible for someone or something besides themselves, can drive a person to act in a manner unexpected by rational choice theories such as the TPB (Schwartz, 1977; Stern, 2000). The overarching conclusion that can be drawn from recent research is that there is limited understanding about how specific social context, both conscious and subconscious, impact on the adolescent decision-making process. The TPB's simplistic model, therefore, falls well short of appreciating the complex nature of social influence, especially for adolescents.

Another factor that the TPB discounts is the physical context of a behaviour. The majority of the behavioural change studies that used the TPB assume that a person's physical setting will not have any impact on their likelihood of taking a specific pro-environmental action (Sniehotta et al., 2014). Surveys, a popular data generation method for TPB studies, tend to choose participants based on their demographic factors, while paying no attention to the physical setting in which the studied behaviours would be taking place (Hargreaves, 2011).

However, several recent studies suggest that the physical setting has a large influence on the behaviour of a person and when no factors other than the physical setting are changed, there can be significant changes in the frequency of a behaviour (Higginson, McKenna, & Thomson, 2014; Shove & Spurling, 2013). For example, studies looking into recycling behaviour in the workplace note the importance of adequate recycling bins; similarly, studies looking at use of public transportation note how dependable or frequent means of public transportation affect pro-environmental behaviour (Heath & Gifford, 2002; Steg & Gifford, 2005). These studies offer insight to potential pro-environmental waste disposal behaviours in educational facilities, and it would be interesting to explore if changes to the physical setting influences secondary students' waste minimisation behaviour.

Overall, the TPB model suggests that human behaviour can be easily explained if the researcher has determined the correct factors and believes that the best way to bring about more pro-environmental behaviours in today's society is to focus on individuals' understanding, values, and sense of agency. While many governments, consumer goods marketers and educational facilities continue to enthusiastically use the TPB model to guide their behavioural change agendas, a growing number of researchers have raised concerns about this theory's assumption that every human actor makes a rational decision based on maximising personal benefit (Darnton, 2008; Jackson, 2005). It will be useful to test these assumptions in this study.

2.4.2   A sociological approach to behavioural change: Social practice theory

It would be hard to find a behavioural change model that was more different from the TPB than SPT. This theory takes a sociological approach to human behaviour, stating that not only is the individual not the most important part of understanding behaviour, but that any attempt to create a linear model of behavioural change will fail to explain the interdependency of influences that create a repeated behaviour (Reckwitz, 2002; Shove et al., 2012). SPT changes the focus from *"How do we shift individuals' behaviour to be more sustainable?* to *How do we shift everyday practices to be more sustainable?"* (Shove & Spurling, 2013, p. 4). The theory also forces a researcher to take a more holistic approach to behavioural change than the TPB (Hargreaves, 2011). The model suggests that behaviours are constantly evolving as a result of changing personal, interpersonal and physical realities. Therefore, any understanding of a behaviour must include how that behaviour came to be, and how that behaviour changed over time (Shove et al., 2012).

In order to understand SPT, two concepts must be defined: *practice-as-entity* and *practice-as-performance*. *Practice-as-entity*, or simply referred to in this study as the practice, refers to a set or cluster of behaviours that repeatedly happen in a specific place, for example, cooking, showering, or disposing of rubbish (Saunders, 2011). SPT argues the practice should be the 'unit of analysis' of behavioural change research, and therefore the data collected must include actual evidence of the practice taking place (Nicolini, 2012). This is in direct contrast to the TPB, that assumes understanding intention is enough to predict a behaviour (Hargreaves, 2008). SPT also assumes that a practice is part of a complex system of other people, social expectations, physical spaces and other practices, thus arguing that every practice is unique to the people and place in which it takes place (Shove, 2003).

The second concept that needs to be defined is *practice-as-performance*. This concept refers to a practice that is performed, or repeated over an extended period of time (Nicolini, 2012). Examples would include when a person turns off a light when they leave their home, or when a student rides a bike to school throughout the year. Practice-as-performance assumes a practice has a life-cycle, or history, evolution and potentially an end (Shove et al., 2012). SPT also lends itself to longitudinal behavioural change studies, as a practice's complete life-cycle is considered important to understanding how behaviour changes (Hargreaves, 2011). SPT has therefore been a popular lens through which to analyse habits or routinised types of behaviour, as by definition they happen repeatedly over a period of time and often evolve slowly (Reckwitz, 2002).

SPT began to gain greater acceptance with researchers studying behavioural change around the turn of the 21st century (Hargreaves, 2011; Nicolini, 2012). This theory has its roots in earlier theorists such as Giddens (1984) and Bourdieu (1977) who sought to build a theory that would not focus on an individual's internal factors as a way to explain common practice, but instead on the conditions surrounding the common practice such as influential images, personal skills and available materials or stuff. According to Giddens (1984), "the basic domain of study of the social sciences … is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time" (p. 2).

Due to the relatively innovative nature of SPT being used to understand behavioural change, there is no single accepted model used by researchers (Hargreaves, 2011). However, a model made popular by Shove and Pantzar (2005) has offered promising insights into analysing pro-environmental behavioural change in public spaces. This model understands practices as having three elements:

- assemblages of images (meanings, symbols);
- skills (forms of competence, procedures); and
- stuff (materials, technology).

All three elements are "dynamically integrated by skilled practitioners through regular and repeated performance" (Hargreaves, 2011, p. 84). Figure 2.5 shows how the three elements link together, explaining how practices emerge, are sustained and die off (Shove et al., 2012).

Materials: including things, technologies, tangible physical entities, and the stuff of which objects are made.

Meanings: symbolic meanings, ideas and aspirations.

Competences: which encompass skill, know-how and technique.
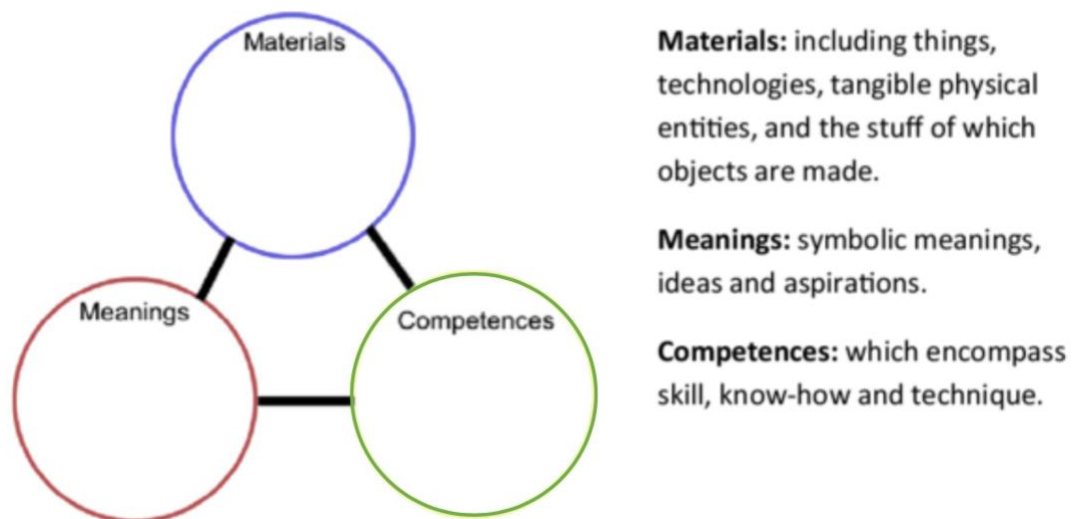
Figure 2.5. Three-element social practice framework (Shove et al., 2012, p. 25)

When applying SPT to the context of a school enacting a waste reduction change, lasting waste reduction behavioural change will require changes to some if not all of the three elements of practice (Shove et al., 2012). The first element, images/meanings, includes "social and personal meaning attempted or achieved through practices" (Scott, Bakker, & Quist, 2012, p. 281). This element may play out in emotive campaign strategies developed by students such as images of animals killed by litter or calls for students to change for the survival of future generations. The second element, skills/competences, is the only element that interestingly is also found in the TPB model (Hargreaves,

2011). Skills include not only students knowing where to put rubbish to reduce materials going to landfill, but also understanding why the practice is important (Scott et al., 2012). Stuff (materials, artefacts) is the third element and includes technology, artefacts, use of spaces, people and structures, such as different bins in which to place different types of rubbish (Scott et al., 2012).

A theoretical and methodological analysis of recent studies that have used SPT has determined that this model can provide an understanding of social behaviour, as well as insight into how behavioural change can occur in social contexts (Halkier, Katz-Gerro, & Martens, 2011). Going beyond the quantitative approaches popular with the TPB, SPT research values in-depth, detailed research of a specific practice and context (Hargreaves, 2011). Halkier et al. (2011) noted that the variety of data collection methods used in the studies analysed, such as in-depth interviews and participant observations, surveys, and waste audits, add credibility to the studies' outcomes, providing useful insights, going far beyond the single survey approach used by many TPB researchers.

While the SPT framework suggests it is versatile enough to provide guidance for behavioural change activists and researchers of behavioural change in any context, this framework has been almost exclusively used to analyse people's purchasing and health habits, often with little consideration of the physical context where the practice-as-performance takes place (Hargreaves, 2011).

One study that has attempted to fill this gap was Hargreaves's (2011) study of pro-environmental behavioural change in a workplace context. Over the course of nine months, he observed the planning and delivery of pro-environmental initiatives by a group of employees that identified themselves as Environment Champions. The analysis of the case study gave insight into new forms of social interaction and re-socialising of employees. Some employees began to question and redefine what it meant to be a good employee, describing pro-environmental aspects as part of their corporate and professional identities.

While the initiative Hargreaves studied appeared to have very limited success, he drew some illuminating conclusions about the influence of infrastructure, legal, social, and power relations related to employee-led initiatives. His research suggests that SPT could be used to analyse different domains of life, as the in-depth nature of SPT can produce different conclusions according to the specific physical and social context of the setting being explored. A second conclusion from the study highlights the need to have a broad focus when evaluating behavioural change initiatives. His study showed that while the Environment Champions' initiative focused on a specific set of pro-environmental behaviours, there were several unanticipated behavioural changes that appeared or increased as a result of the initiative. This study highlighted the complexity of behavioural change, and the need for broad and in-depth research into social identities, interaction and relations when looking at complex environmental issues.

Hargreaves continues with a call for further research using the SPT in diverse social settings. In the present study, it is hoped this gap in knowledge will begin to be filled by using the SPT framework, in addition to the TPB, to generate in-depth data describing pro-environmental behavioural changes

within New Zealand secondary schools, enabling analysis not only of the practice, but also to gain an understanding of the practice-as-performance as it plays out in schools.

2.5 Conclusion

This chapter has examined what previous researchers of pro-environmental behaviour, student empowerment and behavioural change theories have hypothesised, found and not yet been able to explain. It opened with an argument for continued study of waste behaviour, as while this topic may appear narrowly focused, waste behaviour not only plays an important part in larger global environmental issues such as climate change, but also provides insights into waste behavioural change that can generalise to other pro-environmental behaviours.

The value of student empowerment was then discussed, along with what it could look like, and the difficulties in bringing authentic student empowerment into secondary schools today. Finally, two popular behavioural change theories, the TPB and SPT were examined. Each theory approaches the problem of *how to change behaviour*, in drastically different ways. I anticipate both theories will be able to provide some insight into the student-led, pro-environmental change initiatives that are the context of this study.

Given the importance of supporting youth to engage with others in pro-environmental behavioural change and the gaps that have been identified in this research field, this project aimed to find out how a secondary school's structure and culture can enable their success. Also, the hope was to evaluate the usefulness of behavioural change theories to analyse how students engage in planning, initiating and reflecting on behavioural change strategies. Therefore, the following research questions were to be investigated:

1. What are the EC students' perceptions and understandings about their role as change-makers within their school?
2. What are major enablers and barriers to empowering students to enact a change initiative within their school?
3. How do EC student members enact change to waste reduction practices within their school?

The manner in which this research was carried out will be discussed in the next chapter.

Chapter 3: Research Design

This study had three questions that guided the course of the research:

1. What are environmental council students' perceptions and understandings about their role as change-makers within their school?
2. What are major enablers and barriers to empowering students to enact a change initiative within their school?
3. How do environmental council student members enact change to waste reduction practices within their school?

This chapter presents an overview and rationale for the research designed used for this research. A justification for the methodology and case study approach are discussed in Section 3.2, followed by Section 3.3 which describes the outline of the research. Section 3.4 explains the sampling technique used for selecting the participants. Next, the participants involved in this project are introduced in Section 3.5. The six sources of data generation are outlined in Section 3.6 and the ways in which the findings were analysed are discussed in Section 3.7. Section 3.8 addresses the issues of trustworthiness. Finally, Section 3.9 discusses the ethical considerations considered during this project.

3.1 Ontological, epistemological and methodological frames of this research

This research project used a critical methodology with a case study approach. The critical approach in conjunction with a qualitative paradigm was chosen because it contends that reality is complex and can be influenced by hidden social, political and economics foci (Sarantakos, 2013). Another key characteristic of a critical methodology is the need for the researcher to study participants in their natural environment, gaining an understanding of the socially and culturally constructed knowledge in the bounded context of the study (Ernest, 1999). Therefore, this methodology allowed a range of evidence to be gathered and analysed about behavioural change and student empowerment from key people within a school. Gathering and analysing data that showed how student participants engaged in decision-making processes with their peers and school administrators also fitted within a critical methodology.

The ontology that framed this study is constructionism. This ontology presumes that reality is constructed, that while a physical reality exists, a person filters the physical reality through lenses of previous visual-conceptual experience (Kuhn & Hawkins, 1963). Therefore, there is no single reality; people shape their reality based on what they perceive to be true (Sarantakos, 2013). Therefore, this ontology aligns with the aim of this study, which was to understand how each student's personal perception of their role as behavioural change leaders in their school was influenced by their previous personal experiences and their interactions with peers and staff. In addition, this ontology is suited to research how the students' differing perceptions of waste behaviour at their school shaped the

behavioural change strategy. Therefore, the actual waste issue, or physical reality of waste and waste reduction, is less important than the students' constructs of the problem and solutions.

This constructionist view also maintains that reality is not held in a frozen state (Sarantakos, 2013). A constructed view will adjust to demands of changing context (De Fina, Schiffrin, & Bamberg, 2006). It is proposed that such a fluid dynamic was occurring as the students were engaging with their peers and school administrators in their understanding of waste reduction and behavioural change. The view of this reality enabled analysis of the way student participants' understanding and perceptions developed during their waste reduction initiative and how this translated into their effecting behavioural change actions.

A constructivist epistemology underpins the critical research design. It holds the view that knowledge and understanding are influenced by environmental stimuli, such as language and culture (McMahon, 1997; Vygotsky, 1968). Vygotsky believed that knowledge is not a personal construction but is co-constructed through human interaction. This aspect of a constructivist epistemology also relates to the intersubjectivity of social meanings theory. Intersubjectivity refers to common interests and assumptions that provide the foundation of the group's communication (Rogoff, 1991). Social understanding and knowledge are shaped and developed through negotiation within the group (Gredler, 2005; Prawat & Floden, 1994). It is proposed that, in this project, such shared knowledge could influence levels of student empowerment and behavioural change activism. In this way, a constructivist epistemology will aid interpretation of the role of discussion in the development of student participants' understanding of waste and waste reduction, and its role in enacting behavioural change strategies in their school (Gredler, 2005).

This study views human behaviour in line with the qualitative approach: lively, situational, communal, and personal (Lichtman, 2013). Qualitative methodology allows (expects) researchers to get up close to the study's participants and capture context-sensitive data, such as explicit and implicit social rules, power hierarchies and social histories (Sarantakos, 2013). In this way, this research project required data tools that captured detailed and in-depth data (Sarantakos, 2013), so that the data generated allowed for a comprehensive analysis, identifying characteristics of relationships within the school between the members of the EC and staff, as well as how people and actions influenced/changed others' behaviours.

3.1.1   A case study approach

A case study approach was used in this study. Case studies allow the researcher to reveal the wealth of influential variables as they interact with participants and data to produce the unique context of the study's subject (Yin, 1984). This approach is considered "tailor made for exploring new processes or behaviours or ones which are little understood" (Meyer, 2001, p. 329). Case studies allow the researcher to explore "little things", such as routines, or what might otherwise be considered mundane interactions between people and materials (Flyvbjerg, 1998, p. 4). Such characteristics thus suited the type of study I wanted to conduct.

Case studies are often conducted in a critical methodology framework, and are well-matched to analyse "deeper lying mechanisms" that influence the reality of a specific context (Alvesson & Sköldberg, 2009, p. 15). The understanding that real-life situations are complex and that processes and dynamics change over time required a methodology that rigorously examines the interplay of multiple variables in as much detail as possible (Kyburz-Graber, 2004; Wilson, 1979). This type of approach suited the study as I explored how specific social interactions enforced or changed pro-environmental behaviour. Furthermore, Stake (1989) has noted that case studies are often used by researchers to better theorise about a still greater pool of cases.

A case study approach was also chosen because it allowed a focus on a bounded programme, specifically a year-long waste reduction initiative run by students in a secondary school (Yin, 2014). As researcher, I followed the participants as they planned, executed and reflected on their behavioural change strategies within that period of time. In addition, the decisions and actions of the students could not be considered without the context, the school, and more specifically the power hierarchy (Baxter & Jack, 2008). Consequently, a case study approach allowed a holistic view to be gained of the effects of the EC students' behavioural change strategies within particular boundaries.

Using this approach resulted in data that illuminated a "close-up of reality" (L. Cohen, Manion, & Morrison, 2013), exploring the experiences that made up the everyday lives of the participants (Cook & Crang, 1995). It was hoped that this approach would enable generation of data showing how the perceptions and understandings the students had about waste and waste reduction practices were shaped into their behavioural change strategies, giving a reader the opportunity for immersion into the programme. This close-up view was also used to illustrate the many enablers and barriers to lasting, student-led, pro-environmental change. As a result, judgements and interpretations could be made about the type of information, participation in decision-making, the process and the effectiveness of behavioural change strategies in a secondary school.

Three different sites were chosen for this research project. A multisite study allowed for collection and analysis within and across the three sites, enabling the drawing of generalisations from single cases as well as cross-case analysis (Yin, 2014). The data generated and analysed would then allow for wider explorations of the project's research questions and produce more empirical evidence to support theories around student empowerment and behavioural change (Eisenhardt & Graebner, 2007). Having a multisite study also strengthened the findings' trustworthiness (Eisenhardt, 1991).

As a result of using the multisite case study approach, the findings of this study were confined to a specific context and purpose; however, other researchers, young environmental activists and school leaders may be able to make connections to their own experiences (Stevenson, 2004). The aim was to give readers vivid descriptions of the documented events and situations that speak for themselves, rather than relying solely on the researcher's interpretation and evaluation. Consequently, it is my hope that readers will see opportunities to use and extend this study's findings into their own comparable context (Lincoln & Guba, 1985).

3.2 Study design

Designing a study that is fit for purpose to answer the research questions has been described as a "balancing act" requiring the researcher to harmonise the "planned possibilities with workable, coherent practice" (L. Cohen et al., 2013, p. 73). While the research questions for this study cover a broad spectrum of topics, themes, and potential participants, the study design required a more precise focus. L. Cohen et al. (2013) refer to this as a "process of operationalisation" (p. 75); during this process, a three-phase framework was created, as shown in Table 3.1, that ensured there would be concrete answers to the general research questions of this study. The same three phases were carried out at each school site.

Phase One consisted of an EC group activity sorting pictures of different types of rubbish and identifying methods of disposal, as well as data from each school's waste audit and an EC-created action plan. Next, two focus group discussions, one with 10 to 15 members of the EC and the second with three EC student leaders, expanded upon concepts and themes that arose from the previously stated activities. The generated data showed the EC members' perceptions and understandings of waste and waste reduction practice within their school, as well as how they intended to facilitate pro-environmental behavioural change.

Phase Two focused on the steps the EC members took to enact pro-environmental behavioural change, as well as what barriers and enablers arose as the initiative progressed. Data were generated through researcher observations of critical events.

Phase Three concluded the data collection with reflections from the EC leaders where they identified the major enablers and barriers to enacting a waste reduction initiative and what, if any, impact the initiative had had on the waste disposal behaviour within staff and students within the school. Students were also asked to reflect on what people, resources and events increased or decreased their personal feelings of agency.

Table 3.1. Summary of the three phases of the research project

Phase	Participants Involved	Data Collection Activity
Phase 1 *2016 March - May*	Whole EC	Focus group discussion Create an action plan
	EC student leaders (3)	Focus group discussion
	School-wide and EC relevant documents	Document analysis (ongoing)
	Key staff, administrator, key teacher	Semi-structured interviews
	EC members	Waste audit
	EC meetings, presentations and other critical events during the waste reduction initiative	Observations and field notes of critical events (ongoing)
Phase 2 *2016 June – August*	EC meetings, presentations and other critical events during the waste reduction initiative	Observations and field notes of critical events
Phase 3 *2016 Sept – 2017 May*	EC student leaders (3)	Focus group interview
	EC meetings, presentations and other critical events during the waste reduction initiative	Observations and field notes of critical events

3.3 Sampling and selection

Purposive sampling, or selection of a sample that exhibits specific characteristics that a researcher is looking to analyse, was used in this research project. The goal for the study was to add to the understanding of student empowerment and student-led, pro-environmental change in schools. This method allowed selection of participants of a "specialised population" (Neuman & Kreuger, 2003, p. 213), in that they would generate useful data for this study.

There were four criteria used to select possible case study sites. The first key criterion was that a school had to have promoted itself as a school that fostered student empowerment. The second criterion was that the school had to have claimed to have a student-led EC. Next, the schools had to have indicated to Auckland Council WasteWise programme that they intended to focus on waste reduction during the 2016 school year. The final criterion was that a school needed to be in the Auckland region and the school's EC needed to be made up of students aged 16 or older, to ensure that there were not problems travelling to the sites and gaining participants' consent. Besides meeting all four criteria, the three schools that were chosen for this study all had similar decile ratings, or drew their students from similar socioeconomic communities, as can be seen in Table 3.2.

The selection of participants began with obtaining a list, via the Auckland Council WasteWise programme, of principals of Auckland secondary schools who were interested in implementing a waste reduction initiative in their school. I then followed up with each principal as to who the intended leaders of the waste reduction initiative were to be. Only initiatives intended to be led by students were considered for this study.

Stratified purposeful sampling theory, or making sampling decisions that ensure the study will include key variations between chosen study samples, was also used for this study (Patton, 1990). This type of sampling was intended to add to the credibility of the study by clearly identifying characteristics that may have influenced the study's findings. Each selected school could be described as a "typical case", but also suggested major variations within the scope of the research focus (Palinkas et al., 2015). For example, 'Wauconda High School' (pseudonym) was just beginning to take action towards pro-environmental behavioural change on campus, while 'Mundelein College' and 'Grayslake College' both had a history of waste reduction initiatives of varying success.

The selection of staff and student participants followed from discussions with each school's principal and EC supporting teacher. Staff with important roles in each school's waste systems and/or EC, as well as EC student members who were 16 years or older, were then invited by the EC supporting teacher to participate in the study. Furthermore, the criteria for selection of staff included their willingness to be interviewed twice about their perceptions and roles on the waste reduction initiative. All EC students that were of age and wanted to participate in this research were included. Of the EC student members who had consented to participate in a focus group discussion, those with leadership roles were invited to participate in additional data gathering activities beyond the scope of the other EC members, in the form of three additional focus group interviews.

Within each of the three case study schools, three groups of participants were involved in this project, namely key staff, EC student members and EC student leaders. The profiles of each group will now be discussed in turn.

3.3.1   Schools' profile

The data for this study were gathered from three secondary schools in the central suburbs of Auckland, New Zealand. All schools that participated in the study had a student population from a medium to high socioeconomic background, as indicated by the schools' funding decile rating. All schools also had a large group of student members in EC.

Table 3.2. Demographic details of the three participating schools

School Name	School Type	Funding Decile Rating	Number of Students on EC	Participants
Wauconda High School	Boys' secondary school	9	38	3 EC leaders 7 EC student members 2 EC supporting teachers Property manager Principal
Mundelein College	Girls' secondary school	7	36	2 EC leaders 10 EC student members EC supporting teacher Accounts manager Associate principal
Grayslake College	Co-educational secondary school	10	38	3 EC leaders 8 EC student members EC supporting teacher Property manager Principal

Note: Decile rating is a 1 to 10 scale that indicates the socioeconomic level of the community the school serves (Ministry of Business Innovation and Employment, 2019)

A key administrator, supporting teacher(s) for the EC, EC student leaders and the property or accounts manager in each school agreed to participate in the study. In addition, seven (18%) EC student members from Wauconda High School, ten (28%) from Mundelein College and eight (21%) from Grayslake College decided to participate in the general EC focus group interview.

3.3.2   The researcher's relationships with participants

As a WasteWise Advisor, I had a previous relationship with the staff and students of Mundelein and Grayslake Colleges. This role required me to offer information and support to these schools regarding waste reduction and diversion systems. This relationship continued to develop during the study. The strength of the relationships fostered trust with study participants. The relationship with Wauconda High School began when I approached the school to participate in the study.

During the 2016–2017 school year, my relationships with the EC student leaders and key teachers grew as I attended weekly or fortnightly EC meetings as well as EC-organised activities and presentations. When I conducted interviews for the research, I learnt about aspects of students' lives, both in and outside the EC, as well as their values and beliefs around sustainability. As a result, when it came time to conduct the final interview about how they felt about their role in a year's waste reduction initiative, these students seemed to be very comfortable with talking about their successes, limitations and personal feelings.

My interactions with the schools' administrators, property managers and the accounts manager were confined to the formal interviews only.

3.4   Data generation

Multiple types of data generation strategies, consistent with a qualitative methodology and a case study approach, were used in this study (Neuman, 2005). This alignment ensured that the study's findings gave vivid accounts of both direct and indirect behavioural change and student ability to change policy and/or school procedure within the three case study schools. As Hodkinson and Hodkinson (2001) state, case studies focus on understanding complex relationships and processes within a setting and capture detailed and complete data. A summary of data collection methods can be found in Table 3.3. The participants took part in focus group discussions, semi-structured interviews and group activity. Relevant documents, observations of critical events, field notes and quantitative data from two waste audits were also gathered.

3.4.1   Sources of data

This section opens with an overview of the complex data generation procedure followed during this study. Each of the three phases of data collection and the research question, participants and data generation methods are summarised in Table 3.3.

Table 3.3. Table showing sequence of data generation, data generated and participants involved related to each research question

Phase 1: March 2016 through May 2016

Research Question	Data Generation Strategy	Participants	Type of Data Generated
What were the EC students' perceptions and understandings about their role within their school?	Create an action plan	Whole EC	The intended waste reduction initiative goal and steps
	Waste audit	Whole EC	Students' waste practices before the initiative
	Focus group discussion, activity-oriented questions	Whole EC	Expand on the group activity, action plan and waste audit results
	EC student leader focus group discussion (no. 1)	EC student leaders, three students	Clarify and expand upon concepts and themes that came up in whole EC focus group discussion
What are major enablers and barriers to enacting a waste reduction initiative?	Document analysis (ongoing)	EC goals and vision statement; student council guidelines; meeting minutes; waste management procedures and policies	Understand the EC action plan for initiative, any relevant policy/regulations around student council activities
	EC student leader focus group interviews	EC student leaders (3)	Clarify and expand upon EC action plan, previous enablers and barriers, planned methods for engaging key people
	Semi-structured interviews School-wide and EC relevant documents (no. 1)	Key staff/faculty members, i.e. dean, teacher in charge of EC, property manager	Perceptions of EC and proposed initiative, description of the roles of key participants in relation to the success of the initiative
How do EC student members enact change to waste reduction practices within their school?	Waste audit	Conducted by EC members	Quantitative data waste issue at before initiative
	Observations and field notes of critical events (ongoing)	Assemblies, EC-led activities	Descriptions of initiative strategies and methods for promoting behavioural change in others

Phase 2: June 2016 through July 2016

How do EC student members enact change to waste reduction practices within their school?	Observations and field notes of critical events	EC meetings, presentations and other critical events during the waste reduction initiative	Continued collection of descriptions of initiative strategies and methods for promoting behavioural change in others

Phase 3: August 2016 through September 2016

What are major enablers and barriers to enacting a waste reduction initiative?	EC student leader focus group interview (no. 2)	Student leaders (3)	Successful and less-successful strategies to responding to enablers and barriers
How do EC student members enact change to waste reduction practices within their school?	Waste data Observations and field notes of critical events	Supplied by the property manager EC meetings, presentations and other critical events during the waste reduction initiative	Quantitative data of change in schools' waste behaviour after the EC initiative Continued collection of descriptions of initiative strategies and methods for promoting behavioural change in others

Each of the data generation strategies will be discussed in turn.

3.4.2   Focus group discussions

Focus group discussions were chosen as a data generation tool because they provide a good forum for young people to express and reflect on social realities (J. E. Gibson, 2012). This type of interview also encourages participants to interact with each other rather than just with the interviewer (L. Cohen et al., 2013). This allowed me to observe group consensus or divergence about the interviewees' perceptions of empowerment, and anticipated or experienced enablers and barriers to the success of their behavioural change initiative (Lankshear & Knobel, 2004).

Three focus group discussions took place during this research at each of the schools. All focus group interviews were audiotaped. A large focus group was held in the initial stage of data collection (Phase 1). This group included all consenting senior members of the EC and explored the participants' perceptions, attitudes, beliefs, and experiences of empowerment, student leadership and goals for the EC, a wide-ranging expression of views in a format that minimises the impact of any potential biases I might have brought as researcher (Calder, 1977). A list of EC students' focus group discussion questions is included in Appendix A. The statements from these initial interviews were revisited in Phase 3 focus group interviews in order to uncover participants' changed perceptions, attitudes and EC goals as they progressed through their year-long behavioural change initiative.

The second set of focus group discussions included only three of the EC student leaders from each school. This group was interviewed on two occasions, at the beginning and end of the waste reduction initiative during Phases 1 and 3. These discussions generated data about the strategies and methods the EC used to promote pro-environmental behavioural change and what enablers and barriers the student leaders encountered throughout the initiative. These discussions were used to generate further data, for example exploring the EC's waste reduction initiative action plan. A list of EC leaders' focus group discussion questions for both phases can be found in Appendices B and C.

3.4.3   Individual interviews

Individual interviews, or an interchange of perceptions between an interviewee and interviewer, generate data concerning a participant's interpretations and understanding of a specific event or situation (Kvale & Brinkman, 2009; Punch, 2009). The interviews allowed insight to be gained into what the interviewee knew and felt, while also allowing us to discuss and test hypotheses and clarify hidden enablers and barriers to personal behaviour that might not have been revealed in the focus group discussions (L. Cohen et al., 2013).

I conducted semi-structured individual interviews, sometimes referred to as moderately scheduled interviews (Cheney, 1983), with key faculty and staff; these included the teacher(s) in charge of the EC, an administrator and a property manager or accounts manager. This type of interviewing method enables researchers to have a general list of questions for the interviewees, while also allowing freedom to ask relevant follow-up questions that ensure in-depth, detailed data are generated from the

interviews (Zorn, 2008). The interviews enabled the interviewees to project their own ideas as each interviewee's perceptions of the EC's waste reduction initiative were investigated, as well as their perceptions of what role each person might have played in the initiative. Interviewees were asked to reflect upon the success and limitations of the waste reduction initiative, what enablers and barriers the students faced during the campaign and what role they personally played in the initiative.

3.4.4   Document analysis

Document analysis, or identifying and analysing relevant textual materials, played an important role in the data generation stage of this study (Smith, 2009). Documents that stated the outline of critical organisation and political processes within the schools were identified. Documents pertaining to the role of student leadership, waste systems and the EC were collected and analysed throughout the waste reduction initiative. Documents included the EC's action plans, goals and vision statements; student council guidelines; meeting minutes; and waste management procedures and policies. The data generated from the documents and other data sources were used to triangulate data from other sources, such as interviews, enhancing the trustworthiness of this project (Bowen, 2009).

3.4.5   Waste data

A waste audit, that involved the collection, sorting and weighing of all rubbish that each of the schools produced on a single day, was conducted at the beginning of the waste reduction initiative. At the end of the audit, data about how much waste the school was sending to landfill, as well as how much recyclable and compostable materials the school was currently diverting, were gathered. The audit data, alongside the schools' monthly waste collection weights, provided quantitative data showing what, if any, pro-environmental behavioural change had occurred as a result of the student-led waste reduction campaign.

3.4.6   Observations of critical events and field notes

Observations of critical events during the campaign were collected in the form of field notes throughout the study. Field notes are written and visual documentation that a researcher creates during a study to record behaviours, activities, events, and other features of observed events (Schwandt, 2014). The notes were valuable in this study as they provided evidence of how individuals and groups responded to specific information, social situations or events. The journey the EC students took as they attempted to facilitate behavioural change provided more valuable data than the final success or failure of the waste reduction initiative. My field notes included, but were not limited to EC meetings, presentations and other critical events during the waste reduction initiative. The data were triangulated with other generated data capturing a more "complete, holistic and conceptual portrayal" of each school (Jick, 1979, p. 3).

3.5 Analysis of data

Thematic analysis was used to analyse the data gathered during this study. Thematic analysis is a method of identifying, analysing and reporting patterns, referred to as themes, in the data (Braun & Clarke, 2006). During careful reading and re-reading of interview transcriptions, documents, and written observations, the aim is to identify themes that fit the data (Boyatzis, 1998; Strauss, 1987). Strauss suggests that thematic coding opens the analysis, allowing the data to lead the themes and analysis versus the researcher making the data fit preconceived notions (Strauss, 1987). This was ideal for this critical approach-based study that was underpinned by a constructionist ontology of analysing individuals' realities and experiences of student-led environmental activities as they attempted to facilitate pro-environmental change in their school.

Braun and Clarke's (2006) six-phase guide to thematic analysis was followed. During the first phase, I carefully read through the data looking for patterns presented throughout the data, and then identified the general themes. I followed Jones, Coviello, and Tang's (2011) description of themes that "… represent fundamental concepts … core ideas, arguments and conceptual linking of expressions" (p. 635) within the data set. In the next phase, both the line-by-line readings of the data as well as NVivo 7.0 were used to organise the data into significant groupings. Phase three involved examining the initial themes and fitting them into categories, including making sure that the categories covered all the themes and related to the research questions. Special attention was given to ensure that inductive and deductive data were represented and supported throughout the categories. Next, I defined each category and identified which aspects of the data were being captured, making sure that the categories together offered a coherent narrative of the data. The final phase included a final analysis to assess the accuracy with which the categories and themes represented the data set (Koelsch, 2013), as well as the writing of this thesis.

A variety of data was analysed: student focus group interviews, individual interviews with key teachers and school administration, written observations of EC meetings and activities, and documentary data in the form of EC strategic plans, waste audit results and monthly waste weights. A brief description of how each of these data sets were analysed will now be discussed in turn.

3.5.1 Analysis of focus groups and interview data

The data from the focus group interviews and the individual interviews were thematically analysed. First, I compiled a list of themes in the data that were present in one or more of the case studies. Once I had compiled a complete list, I discussed possible categories for the themes with two colleagues. I revisited the data, re-coding into the agreed upon themes and categories.

3.5.2 Analysis of textual documents

Textual documents from each school's website, its handbook (a collection of rules of conduct, policies and procedures students must uphold), meeting minutes and planning documents from each of the EC's meetings were analysed. I looked for evidence of what the students and staff expected from

each other, specifically around leadership roles and limitations. Documents, such as those specifying strategic goals, vision and mission statements, also provided data about how each school aspired to empower students. These documents, as well as others, were used to support or challenge data generated from the focus groups, interviews and other data sources.

3.5.3 Analysis of observations of critical events and field notes

When analysing the data from my observations of critical events and field notes, I looked for evidence of power relations and their impacts on each student-led initiative, as well as emotional and physical reactions to events or encounters experienced by the participants throughout the behavioural change initiative. These notes were analysed in the same manner as the focus group and interview data, by identifying themes.

3.6 Trustworthiness

Validity and reliability are the hallmarks of good research. They determine whether a research project is "worth paying attention to and taking account of" (Lincoln & Guba, 1985, p. 290). However, validity and reliability relate to quantitative research. Qualitative research, such as this study, requires other means of measuring the outcome of a researcher's interpretations and analysis of generated data, and is referred to as trustworthiness. The four criteria used when designing, collecting and analysing the data to establish its trustworthiness were credibility, dependability, transferability and confirmability. Lincoln and Guba (1986) argue that when a researcher can provide evidence that these criteria have been reasonably well met, qualitative data analysis can be considered trustworthy. Each of the criteria will now be discussed in turn.

3.6.1 Credibility

Credibility, the qualitative equivalent of validity, requires evidence that the research findings are believable from the perspective of the participants in the study (Trochim, 2006). However, the data set in itself does not tell the story of the reality of the study's participants, a researcher must interpret the data. Two strategies were used to enhance the credibility of this research (Merriam, 1998).

Firstly, triangulation of data was used as a method of ensuring credibility. Triangulation allows a researcher to take multiple measures of a phenomenon allowing for a broader understanding of each data set (Stake, 1989). The design of this study enabled me to view the multiple data generation strategies from a more holistic perspective (Merriam, 1998). Data from waste data, focus group and individual interviews, documents and observation notes were used (Sarantakos, 2013), allowing cross-checking of the data to look for consistencies, as well as highlight disparities in the participants' perceptions of the reality of the waste reduction initiative being conducted by the EC (Jick, 1979).

Another strategy that was used throughout the data collection and analysis phases of this study was member checking. This strategy consists of returning participants' transcripts to them for confirmation (Creswell & Miller, 2000). After each individual interview was transcribed and observational notes were

completed, the participants were invited to review the raw data and comment on its accuracy. In addition, during the data analysis in Phase Three, participants were presented with themes and asked to comment if their perceptions of the waste reduction initiatives were accurately and fully represented by the themes. The discussions, advice and suggested changes were incorporated into the final coding and narrative of the study.

3.6.2 Dependability

Both strategies used to enhance this study's credibility also added to its dependability. Dependability is the notion that other researchers analysing the same data would come to conclusions similar to those of this study (Shenton, 2004). Through the use of triangulation of data and having study participants review and confirm the interview transcripts, I was able to address any unintended personal bias during the data generation and analysis phase of the study that could have affected the findings.

I also kept detailed records of when, where and how the data were generated, as can be seen in Table 3.3, as well as in the detailed field notes (Appendix D). These records allow a fellow researcher to evaluate the effectiveness of this study's data generation and analysis without having access to the same participants and study context (Marshall & Rossman, 2015), also enhancing its dependability.

3.6.3 Transferability

Transferability, or the critical theory equivalent of generalisability, refers to the degree to which a study's findings can be generalised and found useful beyond the study's particular context (Sarantakos, 2013; Trochim, 2006). Lincoln and Guba (1985) suggest the best way a user/researcher can address transferability is to include detailed contextual information about the case study sites used in the study. This detail will enable other researchers to distinguish what findings and analyses from the current study may be relevant to their own.

This study was designed as a multisite case study, with the intention of offering relative representativeness and greater generalisability of the study's findings (Yin, 2013). Significant contextual information about each case study site is included in Chapters 4, 5 and 6. The findings of this study also identify cross-case findings as well as case-specific drivers of how and why waste reduction initiatives succeeded or failed at each site (Sarantakos, 2013), thus enabling transferability to other researchers.

Another strategy used to increase the generalisability was to connect this study's findings to other literature (Yin, 2013). During the initial period of research into student-led waste reduction initiatives, I found there were limited studies that focused on student-led initiatives, but there was a considerable body of work on similar initiatives in workplaces. Therefore, I could draw on these prevailing theoretical frameworks, extending and explaining gaps and weaknesses in the literature (Yin, 2013). In these ways, the user/reader of this study can compare the findings to their own situations, offering possible themes or frameworks that 'fit' their contexts (Lincoln & Guba, 1985).

3.6.4 Confirmability

Confirmability, or the qualitative equivalent of objectivity, is about the degree to which the readers agree with the findings and interpretations of a study (Lincoln & Guba, 1985). Two strategies were used to enhance confirmability in this study: the creation of an audit trail, and the inclusion of reflections on my position and assumptions regarding this study.

The first strategy was to create an audit trail (Tables 3.1 and 3.3), which is a description of the steps taken to carry out a study (D. Cohen & Crabtree, 2006; Lincoln & Guba, 1985). The purpose of the audit trail was twofold. Firstly, it was to help me maintain accurate and comprehensive notes relating to all the interactions and observations of the context and study's participants. Secondly, the audit trail would enable another researcher to copy the study's parameters. Descriptions of the study's participants (Section 3.3), data generation methods (Section 3.4), how themes and categories were derived, and the decisions made throughout the research process (Section 3.5) are all included.

In addition, I used the technique of reflective analysis throughout the study. Chapter 1 of this thesis includes reflective analysis of how my background influenced my engagement with the participants and the values, assumptions and predispositions I brought into this study. In that chapter, I described my beliefs that underpinned why and how the study was conducted. My awareness of my 'biases' (subjectivity is embraced rather than seen as a 'bias' in qualitative research) enhanced my ability to judge the neutrality of data gathering and analysis phases of this study.

In summary, these four strategies and techniques were used throughout the research process to ensure that the findings of this study were trustworthy and that reasonable conditions of credibility, dependability, transferability, and confirmability were met.

3.7 Ethical considerations

Steps to ensure the ethical nature of this study throughout the research process were vital. Ethics in research are critical as they distinguish between acceptable and unacceptable behaviour and ensure fellow users/researchers can trust the sincerity of a researcher's findings (Merriam, 1998). Ethical approval (Reference Number 016715) for this study was obtained from The University of Auckland Human Participants Ethics Committee on 31 March 2016. The approval covered the ethical issues of informed consent, maintaining confidentiality, and mediation of power relationships between the researcher and the participants, which will now be discussed in turn.

3.7.1 Informed consent

Gaining informed consent, or the process of communicating and getting a signed agreement between the researcher and participants before the research is conducted, is critical as participants need to be aware of their rights throughout the study, along with possible risks and benefits of participating in the study (Chava & David, 1996). Before approaching any participants, I met with each school's principal and obtained site access (Appendix E). Principals then approached the relevant staff members on behalf of the research, to invite them to take part in an interview about their understanding of student

empowerment and their role in the EC's waste reduction initiative. The principal gave each staff member an information sheet, as well as an outline of each participant's right to end the interviews and withdraw their data at any time up to the final analysis stage (Appendices F and G).

In order to gain informed consent from the students on the EC, the principals approached the teacher supporting the EC, asking him/her to distribute information sheets and consent forms to the EC students (Appendices H and I). The students were given time to review the information sheets and ask questions related to the study. In addition, students also received letters for their parents/guardians so that they were informed of their child's commitments (Appendix J).

3.7.2 Participant confidentiality

In order to ensure that the participants in this study did not experience any negative consequences because of their participation in this study, steps were taken to conceal the real identities of both the participants and the schools. A pseudonym was used for each school, EC leader, teacher and student involved, and identifying details about each school were disguised when reporting this research. In addition, the interviews were transcribed by a university approved transcriber who signed a confidentiality agreement. Participants were informed of this agreement in the information sheets (Appendix H).

3.7.3 Mediating power relationships

A quality of this research has been the "coproduction of knowledge" between researcher and participants (Karnieli-Miller, Strier, & Pessach, 2009, p. 279). This blurred line of researcher and participant demanded that I identify and attempt to mediate occasions when my relationship with the participants could impact on the generation or analysis of data. In this study, I had an existing relationship with each school (both staff and students) that could have given the appearance of a conflict of interest or a position of power over the staff and students. As already noted, during the first and second phases of the study, I was working as a WasteWise facilitator for all three participating schools. This role included assisting with planning and initiating waste reduction systems and behavioural change programmes in schools. However, this role did not influence students' grades or relationships with their schools, and therefore presented no conflict.

Furthermore, each principal gave staff and students an assurance that their decision whether or not to take part in this research would have no effect on their employment status, academic standing or relationship with their school.

3.8 Chapter summary

This chapter has outlined the research design used in this study. It was argued that a qualitative, critical theory framework was best suited for exploring the research questions. In addition, the use of a case study approach was justified as a means of generating rich descriptions in order to interpret the perceptions, interactions and reflections of students and key staff attempting to promote pro-

environmental behavioural change in their school. The use of purposive sampling was explained, as were the ways participants were approached and data were generated. The six phases of thematic analysis created by Braun and Clarke (2006) guided the thematic analysis of the data sets. The use of strategies to ensure that the findings of this study were trustworthy, along with consideration of the ethical issues encountered, were also outlined.

In the next chapter, the first case study will be presented.

Chapter 4: Wauconda High School

This chapter presents the findings from Wauconda High School's waste reduction journey during the 2016 school year. This chapter begins with a description of the physical context and social character of the school in which pro-environmental behavioural change was introduced.

The chapter then reports on nine key findings as organised by the research questions outlined in Chapter 2. Semi-structured and focus group interviews generated data about the motivation and expectations of the EC, enablers and barriers, and strategies used by the EC to facilitate behavioural change in the school. Seven interviews were conducted with EC supporting teachers (WT1 and WT2), the principal (WA1), the property manager (WP1) as well as EC leaders and general student members. In addition, notes from observing meetings and intervention activities, and relevant school documents were analysed with reference to the research questions.

4.1   Positioning the environmental action

Wauconda High School is a boys' public secondary school, located in an affluent suburb of Auckland. It is a Year 9 to13 school catering for young men aged 13 to 18 years. It has 137 teachers and approximately 2,380 students, making it the largest school for boys in New Zealand.

4.1.1   A guided tour of campus

Overall, Wauconda High School's physical appearance lends itself to the school's self-described model of a traditional but progressive school for boys. The layout and décor of the campus suggested a focus on academic studies and sports, rather than creating spaces for socialising.

The campus was a combination of older 1960s classroom blocks, and newer administrative and sports buildings built to accommodate the growing student population. The school's buildings are confined to a small portion of the school's campus, leaving most of the space for extensive and exceptionally well-maintained sports fields. The classroom area of the school has a professional adult feel. Building hallways are lined with academic and sports awards.

Much like the school's buildings, the outdoor space consists mainly of concreted walkways with limited greenery. Students spend much of their non-classroom time playing four-square (a game with a small ball) on the paths between buildings or sitting on steps or in hallways.

4.1.2   Special characteristics of the school

At the time of this study, Wauconda High School was ranked one of the top ten academically achieving public schools in Auckland, making it a highly desirable school for both Auckland and international students. The school's Vision Statement states the main priorities of the school are to first promote students' academic success and, secondly, instil honesty, respect and discipline in all students.

Students are expected to take a full schedule of university approved subjects. Of the offered courses, traditional subjects in English, maths and sciences take up most of the curriculum space. A notable exception is the extensive physical education department, offering no less than ten different sports-related courses.

Mid-year and end-of-year exams play an important role for Wauconda High School students. These exams rank each student within the wider student body. Students of similar ranking would be placed in courses together. A large increase or decrease in a student's mid-year exam scores may lead to transferring a student to a rank-appropriate class.

A second characteristic of Wauconda High School is their focus on discipline. The school's Student Handbook and website make several references to the school's high expectations of dress and behaviour. The school believes a "disciplined environment" will give the students the best chance at attaining high academic success. Several times throughout the research for this study, I witnessed the principal patrolling the campus during break times disciplining students on their behaviour and dress. Students who committed minor offences were often required to put on a yellow vest and pick up rubbish during their lunch break.

4.1.3 History of environmental action

Wauconda High School has a long history of students participating in environmentally focused action within the larger community. However, the school has focused very little on the environmental impact of the school itself.

A group of 16 students, with the support of a teacher (WT1), created an unofficial environmental group in 2015. Despite the group not being recognised by the school's administrators as an actual council, the group met once a week, elected leaders and attempted to promote pro-environmental changes in the school. One notable success the newly formed EC had was installing waste paper collection boxes in each classroom in October 2015. This initiative was the first time the school had taken steps to reduce the amount of waste that was being sent to landfill.

At the time of this research, the EC was still an unofficial group within the school and was made up of 38 students. The group was supported by two teachers who were dedicated to promoting pro-environmental change in the school.

4.2 Analysis of the findings for Research Question 1

Research Question 1 focused on how the EC students perceived their role as change-makers within their school. The key findings were students' perceptions of: 1) their desire to have some type of positive effect on the environment; 2) the EC leaders' role of communicating and motivating the general EC members; and 3) the importance of having support from the schools' leaders.

4.2.1 A desire to effect positive environmental change

The main motivation for students participating in the EC was to do something positive for the environment and their school. While one student reported global warming as an issue he wanted to address, no other members gave a specific environmental motivation for participating in the EC. As a group, the EC students identified numerous ways they could bring about positive change; however, the students did not have any agreed upon focus or purpose for the year.

4.2.1.1 General concern for the environment

The EC members reported that that they wanted to have a positive impact on the environment. The members described a world full of environmental issues, including "global warming, waste getting everywhere" (WS1). EC general member WS2 summarised his peers' feelings:

> *The principal really cares about waste and litter around the school so that is definitely something we should work towards but then there is also even more broader issues such as climate change and all the weather effects. Another example is storm drains are filling and not just with leaves but with trash. Some of us think we should have solar panels here because we use so much energy.*

The EC leaders had similar opinions about there being a lot of environmental issues that were driving themselves and their EC peers:

> *What is the overall goal for your environmental council? I don't think it's a clear goal that has been expressed in the meetings. I got involved with the EC last year during a tree planting day. Mr Right [pseudonym] told us about the one million trees goal that the Mayor has. But for the rest of the group I don't know, they all have different ideas of what they want to do. (WL1)*

> *I think it's about getting everyone to think more about how they impact the environment. I mean it's little stuff like not littering and turning off lights. We all know about global warming. We can't ignore this stuff. (WL3)*

The EC members did not believe that there was a need to have a single goal or focus for the year. The students perceived a benefit to having a range of initiatives going on at one time, anticipating several ideas would take hold during the year to bring about several pro-environmental changes.

4.2.1.2 2 Individual purpose, skills and action focus

The EC leaders and general members reported wanting to have personally done something by the end of the school year. However, a brainstorm activity, led by the EC leaders at the first meeting of the school year in late February 2016, showed that there was a wide variety of actions the students wanted to take.

Instead of forcing all members of the EC to work towards one goal, the EC leaders chose to embrace a variety of goals. EC leader WL1's statement was indicative of others, "Rather than try to force everyone to love the environment and do whatever they can, we can try to gain a sense of acceptance

from them and their cooperation." It was this belief that they can't change their peers' ideas that led the EC to focus on small group projects. EC leader WL2 explained:

> *We are all really different so really there is no way we can all just agree on something and get it done there are just too many of us. That's why we have small groups. Everyone got to pick what they want to do [environmental action] and that way we are not forcing anyone to do something they don't care about.*

An outcome of the brainstorm was the formation of a list of environmental issues and personal skills that the EC general members wanted to guide their actions through the year.

The EC list of environmental issues consisted of:

1. Waste;
2. Unsustainable electricity sources;
3. Carbon emissions.

Each of the above issues suggested a different focus. In the case of 'waste' and 'electricity', students discussed the need to upgrade the current technologies that the school used. For example, there might be the installation of waste stations that included recycling and composting bins or the installation of solar panels on the school's roof. Number three on the list, carbon emissions, incorporated several ideas including tree plantings, promoting biking and the use of public transportation.

The EC list of members' skills were:

1. Video making;
2. Fundraising;
3. Marketing/advertising.

From these two lists, the EC members created five working groups: video, fundraising, solar panels, advertising and memes/artwork. EC leader WL1 explained his belief that it was better for the EC to be split into several working groups instead of forcing all members to be excited about a single goal or action. He reported:

> *We need to do something. If we spend all year just talking about stuff, then we are just wasting everyone's time. Getting into groups will ensure that everyone in a group wants to do the same thing and will help get it done.*

Once in working groups, each group chose to begin discussing what was needed to achieve their decided goal or task. The EC members reported being excited to use their passions and skills for a meaningful purpose. Student WS4, in the solar panel working group, described learning about solar energy in his science course, "They are teaching us about all these amazing advances in solar technology and we got to make our own mini solar panels. I want to be able to help the school get panels." The following excerpts are from two groups' initial planning conversations:

I think the video last year [that the EC produced] did try to be serious which was why it wasn't taken seriously, but I think if we tried it again this year and actually got a decent shot at it because again we got some film experts and also we can use that video to gain more respect from students, if you know what I mean, like we can build up a new reputation. (WS5)

I've been thinking about trying to get in touch with the local enviro council at Central Park High School and they are more successful than us and we were thinking about trying to get stuff like the solar panels up in the school. Like we are trying to see how much they cost and see if in future years they would be more affordable. Like I won't be here next year, but I really do hope we get something done by then. (WS8)

It was interesting to note that while none of the working groups identified waste reduction and diversion on campus as a focus, most of the EC meetings throughout the year and all the EC-run activities focused on establishing recycling and composting collection systems in the school.

4.2.2   The roles of the EC leaders: Communication is the key

The EC leaders were elected by the general EC members at the beginning of the school year. The leaders reported feeling obliged to the members to do a "good job at being their leader" (WL2) as a result. When asked to describe their perceptions of their role as EC leaders, the students reported that their job was to help motivate the students throughout the year. They believed good communication was the key to keeping students engaged with the group.

EC leader WL3 went into greater detail about his role as leader:

My goal is to try and develop a culture within the group that is motivated. To see where the group is going apart from the activities and the projects that they work on. My job as a leader is to make sure the group is operating and developing a culture with the students so they come to the next meeting and keep working on their projects.

WL2 reported a similar expectation, "We need to get everyone excited so they all turn up. So we need to make sure everyone knows what cool things we have decided and what the project groups are working on."

The EC leaders created several modes of communication for the general EC members, including taking meeting minutes; posting Facebook updates; and an EC group chat via Facebook.

The Facebook page the EC leaders set up was the main platform the EC leaders used to communicate outside of meeting time with the general members. All discussions or brainstorm activities that took place during EC meetings were recorded and shared on this Facebook page. This page also included other documents such as the year plan, links to articles that the leaders thought working groups might find relevant to their projects as well as general positive affirmations meant to increase the focus and motivation of the members.

Figure 4.1 illustrates a Facebook post WL1 shared highlighting a meme, a popular form of satirical image on the internet, that a working group had created:

Figure 4.1. EC member-created meme

All three leaders posted positive comments, including "Great work guys!" (WL1), "Nice work! Everyone can share this on their own page" (WL3), and "New and improved, look at what the meme group did" (WL2).

Another mode of communication was the Facebook Messenger Chat. With this software, all the members and leaders of the EC were able to participate in an ongoing conversation. The leaders felt the chat was a good way to keep students who were unable to regularly make lunchtime EC meetings up-to-date on what the group was doing, but also to allow them to take part in discussions and decisions in their absence.

The general EC members overwhelmingly agreed that the EC leaders were doing a good job of keeping them informed. Seven out of ten members reported checking the Facebook page for updates when they missed a meeting. However, five of the members who routinely engaged with the Facebook page and chat reported feeling unmotivated to come to meetings. WS3 summarised the feeling of the five unmotivated students:

> They [EC leaders] do a good job of letting us know what is going on. You can tell they are trying really hard to get everyone excited but really all anyone does is talk and post comments and articles. It's like yeah I missed a meeting but after checking the page [Facebook] I know we didn't really do anything anyway.

The EC leaders reflected upon their role as leaders at the end of school year and reported they were naive about what was needed to guide and motivate the members. They all agreed that while they did a good job at communicating with their peers and staff, it was not enough to keep students motivated throughout the year. EC leader WL1 reported, "We really didn't know what we were doing. I never thought the others [general EC members] thought we were doing a bad job but they still didn't attend meetings so I guess that says something about how well we motivated them" (WL1).

Besides communicating with the general EC members, the EC leaders reported it was their role to communicate with key staff members. Again, this proved harder than the students anticipated. Unlike the set meeting times of the EC, and their willingness to engage in social media as a form of communication outside of meetings, communication with school staff required more business-like

approaches, including requesting meeting times, having prepared requests and supporting documentation.

EC leader WL2 gave an example of when they needed to get permission from the principal to conduct a waste audit on school grounds.

> *First we had to ask his secretary to set up a time we could meet with him [Principal], but that wasn't easy because we [EC leaders] have exams and fieldtrips and stuff all the time so finding a time that the Principal could meet and we could all get out of class took a long time. We were hoping to do the waste audit in June but we didn't get a meeting until the next term, and then he didn't think our idea of having it in the gym was a good idea … so we had to schedule another meeting a few weeks later.*

All the leaders agreed that, when they first started approaching staff about EC business, they did not anticipate how much preparation they needed to do when, and how long it actually would take to get permission for any action.

4.2.3   Student-led ≠ student-run

The EC leaders disagreed about the degree to which the EC was student-led; however, they all believed key teachers and the principal played important roles in the success of the EC's projects. The EC leaders expected their two supporting teachers to assist them with administrative tasks, and the principal to grant permission and allocate funds for EC actions. The EC leaders were confident that as long as they had suitable plans of action that would have positive outcomes for the school, the key teachers and principal would support all of their actions.

4.2.3.1   Different degrees of student-led

Two out of the three EC leaders reported that the EC was primarily student-led. EC leader WL1 and WL3 reported feeling the council was "totally" (WL1) and "incredibly" (WL3) student-led. The leaders cited evidence including the lack of participation by the supporting teachers during EC meetings, as well as a perception that all EC actions were totally initiated and planned by EC leaders and members. The following excerpts are examples EC leaders WL1 and WL3 gave about their perception of a primarily student-led council:

> *I think we are an independent group that, so we lead what we want, so actually it is a student-led programme rather than a teacher-led. They provide us with a meeting space and if we needed anything from them, we can easily just go and ask them. (WL1)*

> *It's student-led because most of the time Mr Right and Miss Roberts [pseudonyms] sit there and let us do our own thing which is student-led. Sometimes they don't even show up which shows that we have to lead ourselves. (WL3)*

We come up with all the ideas like solar panels and memes. They give us the odd bit of guidance every now and then but we do most of the work. They also sort of just add another level of maturity to the group and stability basically. (WL1)

Supporting teacher, Miss Roberts (WT2), similarly reported a limited role in the EC, in contrast to the previous year when she took a more active role in the EC. She reported:

It [role in EC] has definitely changed over the past sort of 18 months or so. Now it's getting to the stage where I'm purely facilitating what the guys do as opposed to having to do a large part of the planning sections with them.

However, EC leader WL2 disagreed with describing the EC as a student-led group. WL2 was the only leader to have had previous experience leading a council at the school. WL2 explained his argument:

Coming from another fully student-run group [academic council], the environment council is relatively less student-run and I think it is because the enviro council is quite ambitious with its tasks. When we need monetary funding from administration we can ask for it but the people who are most rational and trusted with these funds are the teachers ultimately. So they really control all of that, they do a lot more than give us guidance.

Observational notes taken during 13 of the 16 EC meetings throughout the school year showed an even greater degree of teacher-leadership in the council. The majority of the meetings started with Mr Right (WT1) giving the council updates about what conversations he had had concerning the EC projects since the previous meeting, as well as taking attendance and stating any decisions or plans that must be made during the meeting. It was only after these announcements did the EC leaders begin to address the members.

Also, despite EC leaders WL1's and WL3's suggestion that the supporting teachers sometimes did not attend the meetings, and therefore the leaders had total control, the meeting minutes that were taken at each EC meeting reported at least one supporting teacher in attendance at every meeting. In addition, of note was that on the two occasions when neither teacher was available to attend, the meetings were cancelled because the students were not able to gain entrance into a classroom to hold the meeting.

Other documents, such as the EC Vision and 2016 EC Strategic Plan, were solely written by Mr Right (WT1) and never seen by the EC leaders or general members, which supported EC leader WL2's perception that the EC was more teacher-led than student-led.

4.2.3.2   The confidence of having the support of adults

The EC leaders' interviews indicated an unspoken expectation that supporting teachers would only let the EC plan for actions that would be approved by the school's administration. As a consequence, the EC leaders and members were confident that all ideas and projects would be approved and supported by the principal, and that having to ask permission was only a formality. The EC leaders described the

role of their supporting teachers as "helping guide us with stuff like rules and getting staff on board with what we are doing" (WL1).

In addition, while the EC leaders had yet to speak to the principal or any other member of the senior management team, the leaders reported feeling confident that the principal supported their goals. EC leader WL2 explained:

> *I believe the school's administration wants the environmental council to make changes to the school. Yeah, all the feedback that we've got from the senior management has been positive. And Mr Rose [pseudonym] is willing to actually put the money out for the environmental council so I'm really confident.*

EC leader WL3 added:

> *He's [Mr Rose] the headmaster. He makes all the decisions. He gets the final say in all the decisions. So if anyone was going to be helpful to us it would be him. I think we definitely can make a difference this year, it's just can we act on without his permission.*

The EC leaders' belief that the school's administration was behind their council, and the actions they were planning, regardless of not yet speaking directly to the principal, enhanced the leaders' confidence that the EC would be able to enact whatever they planned.

The observational notes taken, during the 13 EC meetings that I attended, reported that the supporting teachers never suggested that any idea the working groups came up with would not be supported by the principal. The supporting teachers regularly encouraged working groups to write proposals of their ideas, with the intent that they would then formally present them to the principal for approval.

The leaders expected the failure of any projects or actions to be the fault of them as leaders or the commitment level of the general EC members. EC leader WL2 explained:

> *Reasonably confident [the EC can bring about change] we just have to come up with things to take to the senior management and I think they will be willing to listen to us as long as we have ideas and we don't just go up and say we need to change [without a plan] because they are going to say so what, what do we need to change. And if we have no ideas then we are just going to seem stupid and that will be our fault.*

4.2.4   Summary of findings for Research Question 1

EC members reported some general environmental issues such as global warming and polluted oceans as motivations for their participating in the EC. The group did not have a shared vision for the EC or Wauconda High School. However, general EC members reported wanting to use their personal skills or passions to make a small change or improvement to the environment.

The EC leaders perceived their role as being the council's communicators. This role would assist with organising members and working groups and motivate students both in and outside of meetings. The

leaders used several methods of communication, from the more traditional action of taking detailed minutes of all EC meetings, but also used more modern technologies such as Facebook posts and Messenger. The leaders made an effort to praise and promote ideas and actions of the members. However, the EC leaders' reflection at the end of the year revealed their communication methods alone were not enough to keep students motivated participants in the council.

The EC leaders reported differing perceptions about how student-led the council was, and what the role of the supporting teachers actually was. The leaders did not feel, however, that their requirement to attain permission from the principal for all EC actions was an indication of less student leadership in the council. The leaders were confident that the principal was supportive of their goals and projects and did not see the requirement of asking permission as a real limitation to their initiatives.

4.3 Analysis of the findings for Research Question 2

Research Question 2 focused on analysing the major enablers and barriers to empowering students to enact a change initiative in their school. A major enabler was the perception of the EC leaders and general members that the school valued and actively supported student-led actions. However, this perception was questioned by the supporting teachers, who reported the school had little experience with student-led actions and in fact would not approve any EC-planned action. In addition, the newness of the EC, having been running in the school for only four months prior to the start of this research, and the difficulty of promoting pro-environmental behavioural change to teenagers were identified as barriers to a successful waste reduction initiative.

4.3.1 Enabler: The students' and principal's perceptions of empowerment opportunities

The EC leaders reported the school's administration-led culture of student empowerment as a major enabler for their waste reduction initiative along with a general school culture that supported student-led activities. As a result, the leaders felt comfortable approaching staff and the principal for assistance and permission for EC-planned actions. At no point during the year's waste reduction initiative did the EC leaders feel that any adults in the school did not want them to succeed.

4.3.1.1 A culture and structure that values student-led action

Both the EC leaders and principal reported a culture at the school that promoted student-led action. The EC leaders gave examples of other councils and activities they had participated in that led them to believe the school's administration actively wanted students to make positive changes within the school. Below are two examples the EC leaders shared to justify their confidence:

> I already work in another organisation within the school and this organisation has been able to project youth voice across the country and more. So I feel like a small scale sort of environment like a school can definitely be a very realistic area that we can actually make a difference. (WL2)

Generally what tends to happen if students feel like they want to introduce something new and like a day like an event and they talk to Mr Rose or anyone who administrates assemblies and they schedule a time when they can come up on stage and actually tell the school themselves by going to the stage and talking. So it's easy really. (WL3)

The principal similarly stated that the school's structure and culture was set up to encourage students to take action outside the classroom. The principal highlighted the non-curriculum related groups and activities that the school offers. These include 26 sports teams, and more than 16 non-sport related clubs, all of which are intended to be student-led to a degree. The principal went into further detail:

We provide an enormous amount of opportunities for them [students] particularly outside the classroom where they get to take on responsibility and represent the school potentially and that brings with it other expectations, other opportunities to be a leader to behave in a positive cooperative, collaborative way as part of a team primarily and they pretty quickly stand out if they are not prepared to buy into that and do what is expected of them.

So there is an enormous amount of resources, man hours, staff commitment goes into that programme outside the classroom and it is not just done as something extra. It is something we do deliberately and strategically and take seriously, yeah have expectations around that [student-led action].

While both the EC leaders and principal reported their belief that the school had a culture and systems that supported student-led action, both admitted that they had never been involved or witnessed a student-led change initiative similar to what the EC had planned for the year.

4.3.1.2 Supporting youth as agents of change

The EC leaders reported feeling comfortable approaching staff for support in the researching and planning of the EC projects. While the council had several different foci and planned actions being simultaneously worked on, the main project that required adult support was the waste reduction project. The EC leaders, supporting the EC working group dedicated to reducing the school's waste, wanted to install several recycling collection bins around the school campus. Throughout the year, the EC leaders reported feeling comfortable asking for staff support, and at no point did the leaders believe that any of their ideas had been rejected by school staff.

At the beginning of the year's initiative, the EC leaders had a list of four key staff members who they intended to work with during the year: both supporting teachers (WT1 and WT2); the property manager ('Mr East'); and the principal. The students expressed no anxiety about approaching these staff members, they described them all as approachable and nice. EC leader WL1 summarised the group's feelings:

We see Mr Rose and Mr East the person in charge of the ground staff all the time. I haven't spoken to them yet, but they're always talking to other students so it is kind of just normal to walk up to them. Especially Mr Rose [Principal] because he spends most of his lunchtimes walking around the grounds like he is really approachable.

The principal similarly expected staff to be available and approachable to students outside of class time. He reported:

> *I think they [staff] have a role to make sure that they get involvement with non-curricular activities, because I think without staff involvement sometimes it is hard to get things done here.*

In addition to feeling comfortable approaching staff and the principal for support, the EC leaders reported feeling almost 100% supported, whether it was staff's time or funding. The EC leaders perceived this as evidence that the school's staff and administrators were totally behind the EC's goals and projects. EC leader WL1 explained:

> *I remember the last couple of meetings we got into discussion groups again. Those with Mr Right including myself we were actually discussing things like and he was behind us getting images and looking up forms for new recycling bins [on a computer] which they are quite expensive to get but there is no reason to say we can't get them we just need allocated funding for the next few years …*

> *All the feedback that we've got from the senior management has been positive. And Mr Rose is willing to actually put the money out for the environmental council so I'm really confident. Also, in assembly when he was talking about the school kind of improving on its waste systems it showed he supported what we are doing.*

It is important to note that the EC leaders had not spoken directly to the principal about their waste reduction initiative and its funding requirements at the time they made these statements.

4.3.2 Barrier: Insider's perception of student empowerment at Wauconda High School

In contrast to the EC leaders' and principal's perceptions of Wauconda High School's culture and management systems, the two supporting teachers for the EC reported student-led activities were rare in the school, and that neither the school's administration nor the EC leaders knew how to work together to support a successful student-led action. In addition, the teachers claimed that the school's administrators did not see the waste reduction initiative as a priority.

4.3.2.1 An alternative reality: A culture resistant to student-led action

Both supporting teachers for the EC, WT1 and WT2, were interviewed separately midway through the waste reduction initiative. Both teachers went into considerable detail about how and why the school did not have a culture that supported student-led action. WT1 described how the goals of the EC set them apart from other student groups within the school, explaining that no other council was attempting to make long-term changes to the school. As well as this lack of student-led actions, the environmental focus of the council did not connect with any curriculum being taught at the school. Below are excerpts from WT1:

Other councils that operate within the school don't necessarily operate on a year-round basis with ongoing projects. They sort of do a bit of a once off thing and they might be significant but two weeks ago we had this languages week and our language council they ran events during languages week, but it's one week of promotion of languages and it's done yearly now, it's not ongoing and there's nothing else happening. And it also ties in directly with curriculum whereas ours [EC] doesn't at the moment. We don't teach sustainability studies here at school or anything along those lines.

So I think that most of the other councils have I guess the scope of operations is narrowed a lot. Sort of like charities council will pick a charity and will do a fundraiser and that is what they sort of do and they are very worthwhile and they are fantastic and they do some really good work, but in terms of it getting rolling throughout the year ongoing large-scale projects and working with a lot of different stakeholders outside of the school as well as within it, it is probably what we [EC] are looking to do and what we are doing is probably the broader scale as a group in the school. I've never actually seen it done this way [student-led] before.

Supporting teacher WT2 reported a similar perspective, that the school had little experience or intention to work with students on a whole-school change action. She noted there was only very limited power-sharing between staff and students at Wauconda High School and the EC leaders were not aware what real power-sharing looked like. WT2 reported:

There's no student-led initiative in our school. In name we have plenty of student initiatives, but there's really no student initiative. Even the prefects [head students] aren't really; they are not student elected. The head boy isn't elected by students therefore they have no mandate to lead and they are not leaders. They are just simply there for to make the school look good really, there aren't any good examples of leadership to lead. One perhaps that I could give you [a successful student-led initiative] is the charity council which is actually quite well student-led, but it isn't a student driven initiative in the school.

The system they are [EC leaders] working in is very complicated and the school moves quite slowly … they [administration] just seem to be useless at making decisions. Unless someone like a teacher or parent maybe gets elected to the board [school governing board] and really said no messing around you just go and do it and take the initiative to support the students to make change, it won't happen here.

I think they [administration] need to employ someone to do it [waste reduction initiative], they need to actually give someone responsibility to take them off their timetable but it's not going to happen because it's not a priority. The students don't stand a chance really.

Later in the interview, WT2 revisited her perceptions of student empowerment at the school. She explained:

I think there is no value placed on student initiative, they are really not valued at all. You only have to look at the prefects [head students]. The head boy is really, really not allowed to lead, he is slightly but not really. It's all very controlled. Only a very few schools really get student

leadership right and understand it's not about giving students all the freedom in the world, but it's about listening to them. Our students aren't listened to, definitely not.

Interestingly, the principal's definition of empowered students was for students to be able to make educated decisions after graduating from the school. He stated:

An empowered student would be a student who leaves school with the confidence to make informed decisions and make intelligent choices as a result of their upbringing and the education that they've received.

This statement contradicts some of the comments he made about the school providing opportunities for the students to take action while in school. However, it does support what the supporting teachers WT1 and WT2 suggest is the alternative reality of the student empowerment culture of the school.

4.3.2.2 An important question: Does the school actually prioritise environmental action?

In addition to believing that Wauconda High School did not have a culture of student-led action, WT1 and WT2 argued that the school's administrators did not support the goals of the EC.

Supporting teacher WT2 described the school's administrators as being part of an older generation who were not as concerned with climate change as the EC was. She perceived this difference in environmental concern as a huge barrier for the EC, as without support, funding and permission, few of the EC waste reduction plans would be able to come to fruition. WT2 explained:

It's a completely different understanding [as a school located in a high socioeconomic community] and we are very conservative. We have a lot of people on our leadership who are very right wing and probably not that concerned about climate change, not concerned about leadership which typifies the whole way of thinking and it's frustrating it's [environmental action] not seen as a priority …

I mean dealing with teenagers is one thing, dealing with adults in a range of 20s to mid-60s and how you persuade them. Some people have got firmly entrenched mindsets and thoughts about this sort of stuff [environment] and changing those minds is even harder … It can be quite difficult at a school like this sometimes because of the I guess traditional mindset.

I think a lot of what they [EC] want to do gets blocked by the admin. The frustrating thing is that they [EC] want to do is amazing programme [waste reduction initiative and working group projects] what they came up with last year is really cool but until school pulls their finger out and actually supports them they are not going to get anywhere and it is massively annoying and frustrating and it annoys them and frustrates me a lot. They do all this work and they turn up and they are really enthusiastic and then people upstairs are like oh well we've changed the board and we don't have enough money and we can't do this and we are just going to it half-arsed.

Supporting teacher WT1 reported similar issues in a separate interview. He argued the school had few incentives to support the EC's actions. He also pointed out the conflicting comments and actions he

had experienced from the principal, one day saying the school needs a recycling system, and the next refusing to fund such a system. WT1 reflected:

> *It's not the way our school works, doing things because they are good things to do. They [administrators] need a massive incentive and it needs to be making our school look good on the national stage to really get behind it. It is a priority thing like you have to ask yourselves why hasn't a school this size got recycling you know, and two reasons there is it is not a priority and there is no-one in management who has actually thought about it. The head teacher has said that it's a disgrace that we hadn't done it before but he still hasn't done anything. So we've got to justify it or can get away with not doing it we won't do it. We've got a system, why change it?*

Both supporting teachers believed that the EC's waste reduction initiative and other working group projects were not going to be actively supported or approved, and consequently prevented any movement forward for the EC's goal and projects for the year.

4.3.3   Barrier: A new and inexperienced EC

Another barrier to the student-led change initiative was the newness of the EC, having only just been established four months prior to the start of the waste reduction initiative. All participants reported most students and staff did not know about the EC or its goals at the start of the initiative, making it harder to promote school-wide activities. Also, the EC leaders reported the newness of the council meant there was no agreed group structure, and there was no history of success to inspire the general EC members during times of no action.

4.3.3.1   Promoting change when few know you exist

Both the EC leaders and supporting teachers reported the EC was a relatively unknown group in the school. They anticipated this was going to make it harder to promote change, both to the school's administrators and the general student population. Officially, the EC was not a recognised students' council, as the principal reported the group needed to show their value to the school before they would be officially recognised, as he explained:

> *The expectation is that they [EC] do something, if all they do they get together and have a chat every week, well, the school is not benefitting from that. Normally like with the academic council for example, there would be a deputy principal aligned with that group to oversee it. Sport it would be the sports director who is a member of the admin team and management team as well. It is different with environmental group, it was something new, it came from them [students].*

Supporting teacher WT1 believed a consequence of the EC not being a recognised group in the school was that few staff and administrators knew what the council's goals were, as WT1 explained:

I don't think they [administration] even know we have got one [EC]. I'm pretty sure if you asked most of the managers they wouldn't know, they would know it existed but they wouldn't have a clue what the mandate was. They haven't given us a mandate. That would help like if they came to a meeting and said we are really happy with what you are doing - that would make all the difference in the world.

The EC leaders reported a similar issue with the teachers and general student population, that they did not know what the EC was trying to do, and therefore did not engage with events and activities the EC organised. WL1 summarised the situation:

There hasn't really been much communication between the enviro council and the rest of the student body and there also hasn't been very much communication between the enviro council and the teachers here it probably needs to happen because we could use the teachers backing. Well, we could use the teachers backing us up with the students because there would be more influence on the students to go along with what we are planning and to actually change their routine, as it were.

EC leader WL2 perceived the EC's reputation was in even more dire straits:

I actually joined later than other people partly because it wasn't really explicitly advertised as much as I feel it could have been and I didn't find out about it until I read the notices and actually I want to be a part of this group because I came late.

It's [EC's reputation] gone off the scale at the moment. People have marked it and it will die and I think because we haven't really done very much. One of the goals we had last year was to be like more verbal, more out there than other councils such as the academic council and still no-one knows anything about what it does. Our goal was to be one of those groups out there that students all know about and happening than others.

The EC leaders believed that bringing about change within the school would be easier if the EC was widely known and respected.

4.3.3.2   When there is no history to learn from

The newly formed EC leaders were faced with a lack of history and experience of running a group of environmentally focused students. Basic group management skills and procedures, such as how to run meetings, keep records of group members, and how to persuade people in power to support their initiatives, were lacking at the beginning of the waste reduction initiative.

Supporting teacher WT2 recalled how, for the first four months the EC met, she did most of the administrative work for the group. However, at the beginning of the waste initiative, she handed these tasks over to the EC leaders. She described how the leaders struggled to move the group beyond discussion to actual action-taking:

Last year I was talking with them [EC leaders], planning with them, writing the documents for them, organising them, sending out meeting reminders, this year I am not doing any of that. It was a lot of work last year and I'm not doing that.

They should be trying to influence their peers as much as possible in various ways and do team work. I don't think they know how to do that. I don't think they've really cottoned onto what their roles really are and are still working things out.

They really lack the leadership skills to lead a team and understand how it is you get people to do what you want. They are doing far too much managing and not enough leading, not at the moment.

This perception was mirrored by WT1:

The council is very new so it doesn't have a process yet. They are quite good at process thinking, what they don't have is that creativity which I think you also need if you are going to do campaigns and they don't have the kind of positive energy which, like, some of them do, the leaders like Robert [pseudonym] don't particularly have that positivity, and like the guys can do this, are amazing, they are like we need to do this because students [who] leave rubbish need punishing. It's not quite the right tone, they haven't found it yet.

They also don't have that backward planning capacity to see where they are going to go and how they are going to get there, but I also think these things need to happen organically and you can give them a vision and you can give them a plan but they still really don't see it. So I think that's been the case right the way through the year and they have done some things and they have done some good things and they have raised awareness but they haven't really implemented any long-term change but then it's only been six months so it's not long enough for long-term change to occur anyway.

The EC leaders also identified that their limited understanding of how to motivate others prevented them from leading the EC members towards their goal of reducing the school's environmental impact. As documented earlier in this chapter, the leaders believed a major part of their role was to motivate the general EC members towards focused environmental action. They spent most of their time setting up modes of communication for members to keep their peers motivated. However, the leaders agreed that they had not managed to keep the members focused or motivated. The following are excerpts of the EC leaders' perceptions of their failings:

Motivation is a big issue. Sometimes I try to address my concerns in a meaningful way but in the end it is up to the people within the group to actually like do something about it. Like for example I find myself repeating a lot about the trash audit that is going to be coming in the next few weeks. I feel like we haven't built up enough excitement about it because it is just being the meetings have gone from discussing ideas to just repeating ourselves and then I think that is what the reason is for the poor attendance. It is just a cycle. If we can break that cycle we will have a good group. (WL1)

I mean from past experiences in my primary schools, they have all been within the school like mini projects like making worm farms for example, but I have yet to see like a large-scale major reform conducted by an enviro council that would actually make a huge difference.

At meetings we have about 20 show up, that's about half of the number that showed up to the first few meetings. The numbers are slowly dropping. I think because I think we are not actually doing anything. It is more or less you show up to the meeting and sometimes when the teachers don't come, we don't have any direction, so we kind of sit there and eat lunch and that's it. (WL2)

So trying to develop that culture within the group is really I guess the big next phase for me to see where the group is going, apart from the activities and the projects that we work on in terms of actually how the group operates, having that developing culture with the students. That is probably the hard part. (WL3)

Overall, the EC leaders blamed the failure of the waste reduction initiative on their lack of motivational skills. None of the leaders indicated they would put themselves forward the following year to lead the EC.

4.3.4   Barrier: How to motivate teenagers to care

The final barrier that all participants saw to the behavioural change initiative was the perceived difficulties of getting a large group of teenagers to care enough to change their behaviour. EC leaders WL1 and WL3 described their student body as having a culture of competitiveness and rebellion that could discourage them from engaging in pro-environmental behavioural change activities. In addition, the supporting teacher perceived the high socioeconomic levels of the student population as another characteristic that affected promotion of pro-environmental action.

The EC leaders reported that the all-male population of the student body created special barriers to running an environmental initiative. EC leader WL3 summarised their argument as:

I think there is going to be challenges [promoting environmental action] with every school but I think boys are especially hard because there's the testosterone and the competitiveness and all of that that's going on, people are wanting to be more rebellious than everyone else. So they are not going to do what people tell them whereas a mixed gender, it is more than a mixed gender school not gender stereotypical, but it is more the boys following the girls and the girls are most likely be more compliant and therefore the boys will follow.

However, EC leader WL2 and supporting teacher WT2, the only female participating in this case study, perceived the issue to be less about the all-male demographics of the school but the high socioeconomic communities from where the students came. The following excerpts explain their perceptions about gender versus economic background:

Whole school is made up of humans. The mind is programmed to take the easiest option and if chucking something in just a bin rather than taking out a recycling bin is easier, then the human mind is going to automatically sway towards that one. It's too easy to say it's just because we are guys. (WL2)

I think all boys has got nothing to do with it, but I think high socioeconomic means it is harder to get kids to care about the issues I think because their life is not affected by much. They have very narrow perspective of the world because they don't ever meet anyone from the rest of the world, we have trouble getting them to think about other people. I have trouble getting them to empathise, you give them an essay question about poverty in New Zealand and they have no idea that anyone lives in poverty in New Zealand. It's that kind of looking beyond themselves …

It is kind of funny, I think a lot of students if you walked up to them and started talking about issues to do with things of environmental considerations or sustainability and any one of them could tell you about problems of chopping down rain forests or problems with save the whales or all that sort of stuff, and those are massive issues, but they are hardly things we have to deal with. They don't think of dealing with the rubbish in the school, it's not sorting out recycling and organic materials and all that sort of stuff. (WT2)

Regardless of the reason, all EC leaders and supporting teachers believed that a major barrier to facilitating environmental action at the school was their perception that the general student population lacked personal responsibility to take action for the environment. Whether it was because they were teenagers and wanted to rebel against any initiative that required them to change, or because they did not relate to environmental issues, getting the general student population 'on board' was going to be an uphill battle for the EC.

4.3.5 Summary of findings for Research Question 2

Overall, EC leaders, supporting teachers and the principal identified one anticipated enabler, and three major barriers the EC needed to overcome to lead a successful change initiative at Wauconda High School.

The EC leaders reported an administration-led culture of student empowerment as a major enabler for their waste reduction initiative and a general school culture that supported student-led activities. However, the supporting teachers perceived the situation in the school was the opposite, with student-led activities being rare in the school. In addition, the teachers claimed that the school's administrators did not see the waste reduction initiative as a priority.

Another barrier to the student-led change initiative was the newness of the EC, having only been established seven months prior to the start of the waste reduction initiative. All participants reported most students and staff did not know about the EC or its goals at the start of the initiative, making it harder to promote school-wide activities. Also, the EC leaders struggled to motivate the members to take action.

The final barrier was the school's demographics, with participants suggesting that being from high-socioeconomic communities made it difficult for students to relate to environmental issues.

4.4 Analysis of the findings for Research Question 3

Research Question 3 focused on analysing how the EC students attempted to enact changes to waste practices within their school. This research was guided by two conceptual frameworks of behavioural change, the TPB and SPT. The first focuses primarily on the individual as the locus of behavioural control (Ajzen, 1991; Jackson, 2005). Therefore, changes to personal beliefs and attitudes, or altering personal benefits or losses, are believed to lead to a change in behaviour. The second, and more recent approach to behavioural change theory, that of SPT, asserts that a practice evolves due to pressures of three elements: image, skills and materials. While none of the participants at Wauconda High School had any understanding of either of the theories, their waste reduction strategy could be analysed using one of the two frameworks.

The EC's primary focus in their waste reduction initiative was to install waste stations, the proper technology for a waste diversion strategy in line with the theory of environmental modernism, which is the belief that the new technologies were the best way to decrease their school's carbon footprint (Gilligan, 2012). The purchase and installation of waste stations required the permission and funding from the school's principal. The EC leaders anticipated that if students were provided with an easy-to-access waste station, that included a rubbish and recycling bin, they would correctly use the bin. The leaders did not think it was necessary to engage their peers in learning about environmental issues or improve attitudes towards the environment to get pro-environmental waste disposal behavioural change.

4.4.1 Making it easy to take action for the environment

The EC leaders' strategy to enact behavioural change in the school focused on improving the school's technology, specifically installing waste stations. The leaders believed that that their peers would choose the easiest way to dispose of their rubbish, therefore the goal of the EC's waste reduction initiative was to install several waste stations near to where students ate on campus. The EC's conviction was that the best way to alter the waste disposal behaviour of their peers required upgrading the waste disposal materials available on campus, which was in line with the SPT model of behavioural change.

At no point during the year did the EC leaders or general members create an action plan for the year. However, the EC leaders agreed that by the end-of-year they wanted several waste stations installed around the school campus. Because the strategy focused solely on purchasing and installing bins, the students attempted to gain support from the principal. Observational notes from the EC meetings identified three key steps to attaining their goal:

1. Conduct a waste audit: Gather data about how much money the school is spending to send recyclable materials to landfill;

2. Rubbish sorting for sweets event: To prove that students can correctly use a waste station;

3. Propose waste station plan to principal: Acceptance would mean the school would purchase and install waste stations around the campus.

The EC leaders did not believe they would be able to change their peers' attitudes towards the environment or recycling and this is evident in the following responses when asked if the leaders were confident that they could change their fellow students' behaviour:

> Not very confident. (WL1)

> Not confident. (WL3)

> We're horrible [at this school]. We see people at lunch just chucking things [on the ground] not even in the bins, like at other people. (WL2)

The leaders went on to explain how making correct disposal of rubbish and recycling easy was a possible way to address the issue:

> We are going to have to make a plan so that it is as easy as possible and have the most chance actually of people bothering to put it in the system because people just aren't going to bother. (WL2)

> I think a lot of the litter happening in the school is because there isn't a bin nearby. For example, the nearest bin [to the EC meeting room] is inside the DHY form room and that's locked all the time. We would have to stand up and walk all the way down to the library to chuck stuff out which is why for a lot of the time we litter.

> I think in that respect [littering] trying to make it as simple as possible so there isn't an excuse for them not to. That is, put the bins conveniently in their way. (WL1)

The EC leaders anticipated approaching the principal near the end of June, hoping that approval and purchasing of the waste stations would happen immediately and the school would be recycling by the end of the school year in December. However, the principal did not grant permission to do the "Waste Sort for Sweets" event until April and the waste audit until September.

When the EC leaders met with the principal to propose the purchasing and installing of waste stations on the school campus in November, the principal had already met with supporting teacher WT1 in June and decided the school did not have the funds to purchase the waste stations.

4.4.2 The power of positive incentives

While the EC leaders did not believe it was their role to change the attitudes of their peers, they did believe that setting up positive incentives would encourage students to act for the environment. The EC leaders recalled previous negative reinforcement strategies employed by the principal to get students to stop littering on campus. EC leader WL2 gave an example:

Our deputy principals make students pick up rubbish during lunch when they are late to school or have talked back to a teacher. So it's always people that are bad that have to pick up rubbish. It is unfortunate because it becomes a punishment, a negative association rather than being something constructive.

Also, Mr Rose is always, keeps saying to us the school looks horrible, it looks dirty take a bit more pride and he will make us spend intervals on Friday picking up everything [litter]. It's kind of like we won't do the right thing anymore without being told off.

The principal also reported not seeing significant behavioural change as a consequence of punitive action:

It's [littering] a daily challenge, there has been whole-school consequences [litter pick-up during interval], there are regular reminders. I spent a lot of time thinking about it [behavioural change strategies]. I think it doesn't work if it's a punitive thing. I think it is an educational thing. It is antisocial in as much spitting on the ground would be or throwing chewing gum under a seat or throwing a cigarette end on the floor. None of them would do that sort of thing.

The EC students used the strategy of positive re-informing during their April Waste Sort for Sweets whole-school activity. The event had two goals, one to show the administration that the students would use waste stations properly if they had them on campus, and the second for the participating students to get rewarded for correctly disposing of their rubbish.

The EC lined up rubbish, recycling and compost collection bins in a popular eating area in the school. The bins were set up to make it quick and easy for students to dispose of their rubbish in any of the three bin types. After the students disposed of their rubbish, they were allowed to choose a treat from an EC-managed table of cakes, biscuits and brownies.

The participating EC members reported only positive comments from the students who participated. A spot check at the end of the activity showed a minimum number of misplaced items. However, the EC members expressed disappointment to know that all the collected recycling and compostable material was dumped in the landfill bin. Because of this, the EC members voted to not do a similar activity again until there was a working recycling and composting collection system at the school. General EC member WS2's comments were indicative of others, "Last week was great but it didn't really matter because this week there are no bins around to recycle or compost. The only thing I think anyone remembers about it was that they got free cake." Figure 4.2 captures the EC students standing behind the bins waiting to help their peers choose the right bin to dispose of their waste in. A close look at the image shows most students are smiling and engaging in conversation with their peers.

Figure 4.2. Photo showing EC members running the Waste Sort for Sweets Activity

An additional positive outcome from the Waste Sort for Sweets activity was an increase in attendance at the next two EC meetings. Also, I observed a marked increase in enthusiasm in the EC meeting immediately following the activity. Figure 4.3 shows an increase in attendance after the Waste Sort for Sweets and Waste Audit activities.
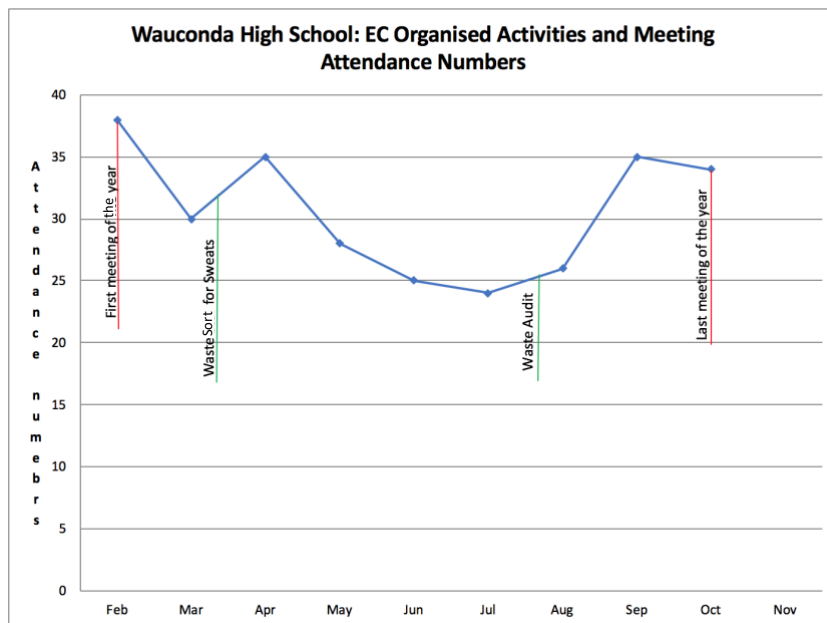
Figure 4.3. Wauconda High School: Graph showing relationship between EC-organised activities and meeting attendance numbers

4.4.3 The overall impact of the EC's waste reduction initiative

There was no measurable reduction in waste to landfill during or after either of the EC's waste reduction activities. At the end of the year, the EC leaders predicted the EC would continue with the initiative the following year; however, they were not keen on leading the group, and were sceptical that the EC would succeed without approval and funding from the principal.

4.5 Summary of the findings

This chapter has presented the findings of the first case study school that participated in this study. The data generated from Wauconda High School led to nine key findings in relation to this study's research questions. The first research question related to the EC students' perceptions of and understanding about their role within their school and findings revealed that the EC students were drawn to environmental action by a desire to do something good for the environment. It was not possible to identify any single topic or action that motivated the EC student members other than a perception that their passions and skills would enable them to bring about some type of pro-environmental change. In addition, the three elected EC leaders reported that as leaders of the council they were responsible for motivating the students to take their ideas of pro-environmental change into action. The findings also highlighted the important role that the key teachers and school's principal had in what the EC was allowed to do on school campus, suggesting that while the council was labelled student-led, it was not totally student-run.

The findings for the second research question, exploring the enablers and barriers for enacting change in the school, identified four major factors:

1. A major enabler was the EC students' belief that the principal, and other staff at the school, wanted them to bring about pro-environmental change in the school. This feeling of agency encouraged the students to persevere with the initiative throughout the year.
2. In contrast to the students' perceptions of the school having a culture of supporting student-led change, the teachers supporting the EC believed that the actual culture of the school was different. The teachers reported that the school had no history of supporting student-led initiatives and questioned whether the school's administrators wanted the students to succeed in bringing about meaningful, long-term change in the school.
3. Another barrier the EC leaders experienced was the newness of the council. A consequence of the EC being less than a year old at the beginning of this study meant that the council and its goals were not widely known outside the council members. The EC leaders believed they needed to be more visible in the school before their peers would engage in EC-run events. There were also no previous successful EC actions that the leaders could learn from when planning the year's behavioural change initiative.
4. The final major barrier to facilitating pro-environmental behavioural change was the anticipated difficulty of motivating teenagers in a high socioeconomic community to take action for environmental issues that were not affecting their lives directly.

The third research question, exploring how the EC student went about attempting to enact change to the waste practices in their school, resulted in two findings. The first was the EC leaders had a focus on changing the physical waste system in the school, making it as easy as possible for the students to act in a pro-environmental manner. The second focus was the perception of the EC that their peers were more likely to change their behaviour if they were rewarded with incentives, breaking from the school's previous policy of making students engage in environmental action as punishment.

Ultimately, the EC leaders were unable to convince the principal that reducing the school's waste to landfill was worth purchasing waste stations. As the leaders believed that the stations were critical to bringing about behavioural change in the school, the EC did not continue to promote waste reduction behaviour the following year.

The second case study will be presented in the next chapter.

Chapter 5: Grayslake College

This chapter presents the findings from Grayslake College's waste reduction journey during the 2016 school year. This chapter begins with a description of the physical context and social character of the school in which pro-environmental change was introduced.

Nine key findings, organised by research questions, are then reported. Semi-structured and focus group interviews generated data about the motivation and expectations of the EC, enablers and barriers, and strategies used by the EC to facilitate behavioural change in the school. Six interviews were conducted with EC supporting teacher (GT1), the principal (GA1), the property manager (GPM), as well as EC leaders and general student members. In addition, observational field notes and documents were analysed with reference to the research questions.

5.1 Positioning the environmental action

Grayslake College is a co-educational, public secondary school, located in the central suburbs of Auckland. It is a Year 9 to 13 school, catering for students aged 13 to 18 years. It has 96 teachers and approximately 1,207 students, making it one of the largest colleges in the Auckland region.

The college is surrounded by an affluent, suburban, residential area in central Auckland and is a well-respected school for its achievement and contribution to the surrounding community.

5.1.1 A guided tour of campus

Overall, Grayslake College gave the impression of a professional and cohesive school. The campus had a business-like feeling, with a focus on utility and tidiness. The campus was a combination of older 1960s buildings and newer relocatable classrooms. The snug fit of old and new buildings created a winding path feel when navigating the school. Most of the green space had been replaced in the last 20 years by portable classrooms and expanding parking areas to accommodate the school's growing student population. The tidy campus had primarily white walls and light blue roofs, nicely coordinating with the school's crest. The conformity of style and colour scheme suggested thought and planning had gone into everything from the placement of buildings, to the style of the walkways and rubbish bins. The majority of the school campus consisted of beautifully manicured sports fields. The size and quality of the space enabled the school to train and host many sporting events throughout the year. Trees and other greenery were limited to the outer boundaries of the school.

5.1.2 The special characteristics of the school

Grayslake College was ranked below only nine other public colleges in its students' academic achievement in the Auckland region, making it a highly desirable school to attend. The school's 2014–2018 goal of 90% of students (or higher) achieving NCEA at Levels 1, 2, and 3 (the New Zealand secondary school qualification system), led to many changes to the school's curriculum, including more instructional time set aside for mathematics and English teaching than other subjects.

One of the biggest issues the school was facing was a growing student roll. The school was expecting an additional 200 students over the following five years, increasing the strain on already crowded facilities. The 2016 school charter described the campus as "old and tired" and in need of major refurbishing and new construction and gives a brief outline of planned building and renovation of the school. The document references a five-year campus plan, focused on transforming the school into a modern learning environment with a top of the line ICT infrastructure.

5.1.3 History of environmental action

Grayslake College had been engaging in waste reduction practices since 2012 when paper recycling was introduced to all classrooms. In 2014, Grayslake College began participating in the Auckland Council WasteWise programme, though other school commitments for both teachers and students often meant there was little engagement with the programme until 2016.

While the EC had been unable to make any changes to the waste systems in the years leading up to this research, they were able to organise three annual activities: a whole-school waste audit; a Valentine's Day fundraising event; and an end-of-year beach clean-up. These events were well attended by EC members and non-members alike and raised funds for the EC's goal of purchasing waste stations for the school during the 2016 school year, the year this research was conducted.

The EC has been supported by 'Anabelle' (GT1), a science teacher since 2013. She was a self-described environmentalist, but strongly believed the EC needed to be student-led. At the beginning of the 2016 school year, the EC boasted 36 students.

5.2 Analysis of the findings for Research Question 1

Research Question 1 focused on the EC students' perceptions and understandings about their role as change-makers within their school. The key findings were students' perceptions of: 1) Their motivation to drive change; 2) Their role as sole drivers of environmental action at the school; and 3) The limitations of voicing their opinions.

5.2.1 Motivation for driving change

The main motivation for students participating in the EC was to bring the school's waste systems in line with what they perceived as common and expected waste reduction systems for schools in their region. Most students had experienced waste reduction and diversion systems in their primary schools, as well as site visits to several other local colleges. EC students also anticipated an increase in school pride, both for themselves, staff and the greater student body when waste diversion systems were implemented.

5.2.1.1 Pro-environmental behaviour in other contexts

Student EC members reported that a major motivator for joining the EC was to help bring about pro-environmental behaviours they had experienced at other schools. Seven students on the council

indicated their intermediate school had some kind of recycling collection on campus, five also had composting systems. EC leader GL1's comment was indicative of others:

> *My intermediate, it [recycling] was a really big thing and heaps of people helped and I feel that is because it made us feel as if we are making a difference. That school is just down the street it should be the same here. (GL1)*

In addition, the three EC leaders had visited other colleges as part of the WasteWise programme. The following are excerpts that illustrate how these other school visits impacted on them:

> *That [school visit] was very interesting, very productive and the talk that I had with the other schools was really useful. It was really useful for me to see how recycling was implemented in other schools and other aspects of the environment that they have created and it gave me a bit more confidence and made me more positive to think about changes that might happen at our school one day.*

> *They had really nice looking waste stations all around the school with signs for each bin. I know several other schools that have the similar stations. It was cool to see them being used in the school because we can show people pictures and say hey, look, this is possible. (GL2)*

Interesting to note was that the school's property manager also reported visiting one of the schools the leaders had been to. He expressed a similar response to seeing successful waste reduction behaviours and systems:

> *I've been to another college and I had a look at their recycling and that. I think it's [college] the same size. They have a lot of that recycling. They had pretty much sorted that side of it out. But the chap [property manager] told me that he gets involved where he can. We can do the same here. (GPM)*

These comments show how valuable it was for the EC members to see pro-environmental behaviour in other schools. It also supports the EC leaders' perception that the EC's waste reduction initiative was designed to bring about a common and expected pro-environmental behaviour to their school. EC leader GL3 reflected on the difference between the schools she had visited and Grayslake College:

> *It is really sad really because we are a good school and we all want to do the right thing. There is no reason that we are not recycling like the other schools. If we are such a great school then we need to be doing more of this stuff.*

5.2.1.2   A positive image of pro-environmental action

EC students also anticipated an increase in school pride, both for themselves, staff and the greater student body when waste diversion systems were implemented. It was generally agreed amongst all participants that the school community wanted the opportunity to act more environmentally responsibly. EC leader GL2 explained:

There is rubbish here but it's nothing like other schools I hear of around here - they just literally throw it down and don't even look for a bin. Here it is totally different. I think people are aware and go, oh no, you can't do that. Now all we need are recycling bins.

The EC leaders and general members all reported having heard from the school's staff and administrators about the link between having a clean school and increased school pride. EC member GS2 recalled a conversation with a staff member:

He kept saying the school looks horrible, it looks dirty, take a bit more pride. I remember him making us pick up rubbish during parent teacher interviews and other times people are coming to our school.

However, the EC leaders and members suggested they had higher expectations than just a clean-looking school. The students explained the differences in the following excerpts:

He [principal] wants us to be pushing the way towards a certificate or a goal like that. (GL1)

Yeah, something they can put on their logo. (GL3)

But when it comes to the fundamental reasons behind being environmentally friendly I don't think they actively want changes. I think they just want less litter and a mural on the wall. (GL1)

Our environmental impact as a school is more than how the school looks. It's about making less rubbish, turning off lights, a real impact. That's why we are doing this. (GL2)

Despite the differences in the degree of pro-environmental behavioural change, staff and EC leaders and members all agreed that making the school a more environmentally responsible place would increase pride for the school and its surrounding community.

5.2.2 EC alone leads environmental change

The role of the EC leaders perceived by all the general EC members and supporting staff was that the leaders were solely responsible for organising pro-environmental change in the school. All participants agreed that environmental activities and initiatives were outside the college's core focus and the academic needs of the students. However, the EC leaders and students believed that they had the general support of the wider student body and staff in bringing about more environmentally responsible systems in their school.

5.2.2.1 Roles of the EC leaders

When EC leaders were asked to describe what they perceived their role was, they were in agreement that anything that had to do with waste, gardens, or any other environmental focus was solely their responsibility. EC leader GL1 explained that the school's staff and administrators, rightfully so, were focused on academic matters:

The principal and teachers don't have a lot of time. They have to make sure that all of us are learning and stuff. I mean that's what they are supposed to do. We have the council [EC] to do the other stuff that they [staff] can't do.

Another EC leader added:

We are the ones that have to come up with the ideas with support from the teacher and other support staff. We have to instigate the idea and then get support from others and then we tell others on the council what is happening. But we don't just like take over, it is more like getting everyone's opinions and then collecting it and thinking of good ideas …

We generally just have backing from the one teacher and if we want to get something done there is no teacher driving us. We can use teachers for resources, but we have to have the ideas ourselves. (GL2)

This was mirrored in the PM's response to the same question:

Being the property manager at the school, it is a vast job, there is just so much else governed not just the recycling, there is just so much else that needs to go on with this job, you know. Of course, the rubbish side there's the grounds, the tree work, arborist work, there's the spraying, there's all the ground work I have to oversee.

I expect them [EC leaders] to start putting it out there with the whole college in assembly, emails and getting it out there that this goes in that and this is what we're about. They have to be more focused on the environmental stuff.

5.2.2.2 A well-respected role in the school

It was a generally held perception by EC leaders that the majority of staff and students in their school wanted the EC to make changes to the waste systems to promote more pro-environmental behaviour. With the exception of the principal, the EC leaders reported positive feedback from staff about their goal to introduce a recycling collection to the school's waste system. EC leader GL3 reported:

I think that a lot of teachers and staff would like to see the change in the environment, but they are all so busy that they can't really do much about it. But I would say they would really appreciate when something has been done.

Another leader recalled speaking to their EC supporting teacher:

She has been like talking to other staff members during her breaks and they are really supportive. That is like the kind of vibes that I got. (GL1)

Because of this perceived support, the EC leaders reported feeling comfortable asking most teachers for support. Though one leader explained she considered the teachers too busy to ask them to physically help, she reported:

I ask my science teacher a lot of questions, and the tech teacher was really helpful when we were trying to figure out how to lock the bins. So, yeah, the teachers are great but they are really busy so I've learned not to ask them to write emails or anything like that. They end up forgetting anyway.

The leaders reported similarly positive feelings from their student peers. EC leader GL3 explained:

It is like cool you are in the enviro group and I think it is because of the activities that we do such as Rose Day which is quite popular among the school. So it is like, oh, they plan cool stuff and it's good for the environment. My friends ask me when we are going to get the recycling bins out all the time.

This perception was mirrored by the EC supporting teacher:

The students too because I think some of them are quite frustrated, you know, to see that there is no recycling system at our school and also most of these kids, especially Year 9, they come from the previous environment when everything has been recycled and it is a bit of shock getting to high school and to see such a waste. (GT1)

5.2.3   Real change means getting the principal's approval

It was understood by the EC leaders and all supporting staff that the principal alone made decisions that impacted on the look of the school. Only after the principal had granted permission would the EC be able to purchase and install waste stations on the school grounds. Because of the principal's senior position in the school, the EC leaders were only to interact with him through formal channels, including emails and scheduled meetings. There were several conflicting perceptions about how much input the EC leaders had in the principal's decision-making process.

5.2.3.1   What role do students play in creating their learning environment?

The Grayslake College's *2016 School Charter* highlighted the importance the principal put on the school's campus visually promoting the academic excellence of the school. A five-year campus refurbishment plan had been recently created to ensure that all changes to the campus fit in with the long-term vision of the school.

The principal reported considering ways to involve students in the plan; however, he then decided that gathering input from the students to inform his decisions around the plan was a better option. He explained:

One thought was we get students to redesign the quad but I'm a bit sceptical around that because it is a big investment and it is probably a bit more bigger skill base than some students doing a design class, with all respect to the students. But to have active student voice in that around issues like environmental and so on is awesome.

This five-year plan was cited by the principal as the reason why the EC leaders needed to present all changes to the school's waste stations to him for his sole consideration.

5.2.3.2 Formal modes of communication

All three EC leaders believed the principal wanted to hear their plans for implementing waste stations and further pro-environmental behaviour activities. However, the leaders noted the principal required all communication methods to be, as the leaders described it, formal. EC leader GL2 explained what they meant by formal:

> We need to make sure that we know every single detail of our plan thoroughly because we can't just go in like half-heartedly and then not know about our plans. We need to make sure we've got everything sorted if we are taking it seriously.

Another EC leader worried that they would not be taken seriously, "We could look like a joke when we are actually really serious about reducing waste in our school" (GL3).

Partly due to the EC leaders' desire to only communicate in clear and concise ways, and partly because the students reported not typically seeing the principal during the school day, all communication between the leaders and principal was through email and during scheduled meetings. EC leader GL3 described the difficulties of only communicating through email:

> It was a bit different [than talking to the PM] in that sense he's [Principal] got more authority that was more apparent. So we had to be more formal and we couldn't be like assertive and email him every single day. So we stepped back a bit and gave him time to reply to emails and stuff which meant we waited a lot. We didn't know if he was busy or that he wasn't for the cause. It was just really confusing. I just wish we were told more and like that he told us if he was busy or if he wanted to speak to us because it was us initiating all the moves, all the meetings.

The principal also reported his inaccessibility during the school day meant that emails needed to be sent to his secretary to set up meeting times as this was the best way to get hold of him.

The leaders met prior to each meeting to organise their presentation. They considered not only what their plans were for the waste stations but also what they should and should not say to gain the favour of the principal. EC leader GL1's comments were indicative of the others:

> We just didn't know what to expect, that was why we were like should we be saying this and should we not be saying this. And we didn't know the line, are we allowed to say certain things because we are talking to the principal, are we allowed to bring about so much change? How much of an agenda should we put forward or how much should we be collaborative?

Three meetings with the principal took place during the year. At the end of each meeting, the principal reported feeling excited to have heard the EC leaders' ideas, even though they conflicted with the five-

year campus refurbishing plan. In contrast, the EC leaders reported uncertainty and concern after each meeting. An EC leader described her feelings after one meeting:

> *Well, our school talks a lot about making students empowered and students are allowed to share their opinions, but it is one thing to express your opinion, it is another to have it accepted and have the other person seriously think about it. I found the meeting really difficult and felt like we weren't achieving anything. (GL1)*

Overall, the EC leaders reported the formal structure of the communication with the principal required them to think through their ideas, and make sure they had a well thought out plan. However, because there was no discussion during the meetings, the EC leaders did not know whether the principal considered their ideas when the principal made a decision about allowing waste stations on the school grounds.

5.2.4 Summary of findings for Research Question 1

EC members reported their main driver for joining the Grayslake EC was to bring about pro-environmental changes to behaviour and systems within their school. The members perceived their school doing less to minimise their school's environmental impact than were surrounding schools. Also, the EC members believed that their fellow students and staff wanted to be more pro-environmental but were unable to be because there was a lack of supporting materials, for example recycle collection bins.

The EC members, as well as staff, believed that pro-environmental activities must be led by EC students, as these actions were outside the school's academic focus. The EC leaders were confident that they could evaluate, research, plan and action waste diversion systems in the school. Teachers and staff were seen as useful resources, who the EC leaders could rely on for assistance with ideas and planning; however, all actual work was to be done by EC leaders and students.

The one exception was the principal, who perceived part of his role was ensuring all actions taken at the school fitted into the long-term plan, and therefore he had to approve all actions that would change the look of the school campus. Also, a consequence of the principal's position at the school was that the students were required to follow professional protocol in order to speak to the principal and ask for waste station approval.

5.3 Analysis of the findings for Research Question 2

Research Question 2 focused on analysing major enablers and barriers to empowering students to enact a change initiative in their school. A major enabler was the supporting relationship the EC leaders had with key adults. In addition, the findings identified three major barriers: 1) A limited role for general EC members throughout the year; 2) EC leaders were not privy to crucial school documents and plans; and 3) Difficulty in coming up with a solution that fulfilled everyone's needs.

5.3.1 Enabler: The power of a supportive adult

EC leaders reported the support of key adults as a major enabler for their waste reduction initiative. These adults, including the property manager, a supporting teacher, and an external waste specialist, actively sought out the EC leaders during the year to "check-in" (GL3) and "offer support" (GL3). The EC leaders perceived these check-ins as the adults believing in them and their initiative. The EC leaders also reported that they often asked for support around planning and presenting their ideas during these interactions.

5.3.1.1 Unexpected affirmations

All three EC leaders stated that the greatest enabler for success they experienced through the year was the unsolicited support from key adults, specifically the school's PM, their supporting teacher and an external waste specialist. The EC leaders assumed that none of these three people had any obligation to assist them as EC leaders or to support environmental action at Grayslake College. When the leaders were asked what was different about the way these three adults interacted with them, the EC leaders agreed it was that these adults came to them and offered help. The following excerpts describe some of the first contacts the leaders had with the three adults:

> *The first time I met the PM was when we kicked the ball over the fence and his dog was there. The dog is scary. He's kind of scary at first. But then we needed help with the waste audit and the tech teacher gave me his number. From then on, we could just call him and ask a question and sometimes he'd run up to me during school time and say, hey, how are you going with the bin systems? He actually seemed like he wanted to make a difference and listen to us. (GL1)*

> *I feel like we were empowered by our key teacher. She made us feel empowered and made our opinions seem worthwhile. She's so busy but she's always at our meetings. But the thing is she has added a voice like she says all the staff sees her like as an enviro freak and stuff and it is so sad because she is so kind. (GL2)*

> *Our waste advisor was our main driving force because like we never really would have taken any action if there wasn't like someone behind us urging us to go on because it never really occurred to us, like of this whole situation, we got all this information from the waste audit but we didn't really know what to do with it. (GL2)*

In each of the above descriptions, the EC leaders perceived the adults as wanting to help them, in contrast to other staff such as the principal who the students had to ask to engage with over the year. A common perception, by both the EC leaders and the supporting teacher and PM, was that the principal was very busy. However, the EC leaders maintained that the other three always had "time for us" (GL1).

One EC leader went into more detail about the difference between their relationship with the PM, in contrast to the principal. She explained how she felt more comfortable with the PM:

Definitely a lot more comfortable and equal with the property manager. He was really accepting of what we wanted to achieve and the bin stations that we wanted. He was keen to put in some of his property funds into getting those. (GL3)

EC leader GL1 added, "Yeah he always emailed us and he always seemed really enthusiastic about everything we did, so that made us feel really comfortable."

The feeling of being an equal differed drastically from the more formal interactions the leaders had with the principal. The EC leaders reported a consequence of the formalities and meetings with the principal meant they were never sure if he was supportive of what they were trying to do.

5.3.1.2 'Adult-like' skills

Another benefit the EC leaders gained from the interactions with the three supporting adults was assistance with "adult things" (GL3). All three leaders perceived their greatest weakness as limited experiences with day-to-day administrative tasks that running the EC required of them, as well as knowing how to formally present information in written and oral formats.

The leaders reported that they learned most of the day-to-day administrative skills needed to run the EC from their supporting teacher. Below is an example of some tasks the leaders were able to learn:

In the beginning she helped us with everything, all the admin kind of stuff like putting the notices into the daily notices. Providing us with supporting like different ways to do the waste audit and she is like the connection between us and the other staff. So she's like a bridge. (GL1)

By the end of the waste reduction initiative, the leaders described these skills as some of the most valuable things they learned from the experiences. All three leaders described using the newly acquired administrative skills outside of school, including for university applications, CV writing and job interviews.

The EC leaders also reported the PM assisted them with communication with other organisations, including getting "quotes for waste stations options, used contact information when he bought other bins" (GL1). Likewise, as WasteWise facilitator, I helped them organise the information into a two-year action plan. EC leader GL2 explained:

She helps to facilitate all our ideas and help us come up with a plan of what we actually want to achieve, not to have like a, oh, that would be cool, like having lots of random thoughts, she helped us to collate them altogether.

The leaders found the help from these two adults critical for preparing their final presentation to the principal. They assisted with actual researching and planning, while also building their confidence that their ideas were worth presenting.

5.3.2   Barrier: Limited participation

The general EC members reported their lack of opportunities to participate in planning and taking action as a major barrier to the waste reduction initiative. The first EC meeting of the year took place three weeks into the school year. Thirty-eight students showed up, pledging to support the EC leaders to take environmental action throughout the year. However, at the third and final meeting of the year, only seven of the 38 general EC members turned up. The following two sections will go into detail about why the remaining seven members reported feeling disappointed in the EC leaders.
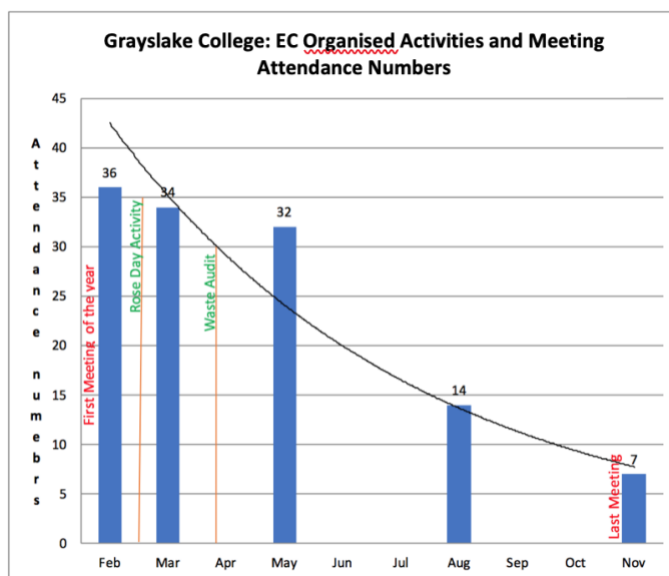
Figure 5.1. Grayslake College: EC-organised activities and meeting attendance numbers

5.3.2.1   *Not knowing the plan*

The general EC members reported feeling enthusiastic at the beginning of the waste reduction initiative. There was a general expectation that they would be participating in discussion around waste reduction and taking steps to change the school's waste systems and waste disposal behaviour. The following excerpt is a member's description of her expectations of what she was going to do as a member of the EC:

> *I think back for example at my intermediate it [EC] was a really big thing and heaps of people and I feel that is, was fun, because we really made it feel as if you are making a difference. Like there is this group of you and you do stuff like planting trees. You felt like you were doing things all the time and learning about stuff. (GS3)*

Her initial excitement quickly faded as the waste initiative progressed:

> *The way the enviro group was organised they [EC leaders] kind of disappear for the rest of the year. And it doesn't feel like we are anything big, like we don't really do anything. (GS3)*

When the general EC members were asked if they were aware of a plan for the waste reduction initiative, none of the seven students had seen a plan. Following are excerpts from the general EC

students explaining how the lack of participation in and understanding of the plan impacted on their commitment to the EC:

> *There's ideas that have been thrown around but there has never really been a set plan like there's goals, but there's not anything like written down or communicated to us about what we are going to achieve and how to achieve it. (GS1)*

> *Mainly not having a plan means there is not that much for us to do because if we don't have a plan then like we can't come up with ideas because we don't know what the leaders want, we don't know where we are trying to get, we can't do things because we don't know what, where we are trying to get and what we are aiming to be doing. (GS2)*

> *I think the communication is a bit kind of distant, yeah, lacking from between the group itself and the leaders because I think the leaders have so many ideas but it's very hard to put in place especially because the deputies [EC leaders] aren't fully on board actually wanting us to do anything, it is more that we want to do something and we are trying push something to them. So it is kind of quite difficult really. (GS4)*

> *This council is a bit boring to be honest. That's why everyone stopped turning up. (GS5)*

The EC leaders reported being aware of the disconnect the general members were experiencing. The leaders reported causes for the lack of including the general members in planning and action as being: 1) The meetings were very chaotic, and the leaders did not feel they were capable of getting the students to have useful group discussions; and 2) Students are really busy and having a lot of meetings when they have not got permission from the principal to take action would waste students' time. The following comments were indicative of how the leaders perceived their success at leading the other members:

> *I don't know - I think I just wasn't prepared for this type of thing, I mean, I don't really like talking in front of everyone. I remember on the application form there was nothing about the enviro prefects' role and all the other ones had like actual bullet points on what they did. So it was really confusing as to what, like even this year, there was no role descriptions and people messaged me saying, hey, what do I actually do. But maybe it will be better in future to ask them what they think and their ideas. (GL1)*

> *If we meet like once a week or something, it would be like, well, there's not much to talk about I guess. So we just tend to plan one when there's a coming event or something. I suppose if we had them [meetings] more regularly, it would encourage more discussion, but some people are only semi-committed and it might put some people off, but then there are some who are quite devoted. (GL3)*

5.3.2.2 Grumbling from the masses: Concerns about the commitment of the leaders

A consequence of the EC leaders not engaging with the general EC members was a growing hostility among the members. The members openly questioned the commitment of the leaders, attributing laziness or disinterest in environmental activism as reasons the waste initiative was not proceeding

during the year. Their final rejection of the leaders was evident in the failure of the remaining leaders to be re-elected the following year.

When five general EC members were asked about their leaders, most reported a lack of commitment to the waste reduction initiative and to the council. One member pointed out that the official environmental prefect, GL1, had never been a member of the council, he reported, "She wanted to be on the sports council or something. I think this was her last choice. She didn't even show up to the waste audit or anything." Another member added, "She was the only one with a prepared speech" (GS5), a requirement for any student running for a council leadership role.

Observational notes from the three EC meetings the leaders held during the year showed the EC leaders started each meeting with a very short summary of what they had been doing since the last meeting. Generally, the leaders only shared what they considered big steps forward, for example they shared about their planned meetings with the principal, and the amount of money the Rose Day event had raised for the purchase of the waste stations. However, the leaders did not mention applying for additional funding from other organisations, or their ongoing communication with the PM and tech teachers about possibilities for building parts of the waste station on campus.

The final meeting of the year was called by the EC leaders to share the outcome of their presentation for the waste stations to the principal. The leaders shared that the principal had decided against allowing the EC to use its fundraised money to purchase two waste stations for the school. The immediate reaction of the seven general EC members who attended was that the leaders had failed. One member shared his disapproval stating, "I didn't even vote for you" (GS4). The meeting ended shortly afterwards.

It was the perception of both the EC leaders and the general members that lack of participation and communication between the leaders and members resulted in feelings of disappointment and disengagement amongst the EC. The EC leaders reported feeling the members were not willing to support the waste reduction initiative, and the members reported believing the leaders were equally not as committed.

5.3.3 Barrier - Creating a plan without sufficient information

An unanticipated barrier to student-led change in the school was the EC leaders' lack of access to information. The students were not privy to information about current school change politics, policies, and future campus redevelopment plans. As a consequence, the plan the EC leaders presented to the principal was deemed incompatible with the school's short- and long-term goals.

The EC leaders perceived their role for the year was to take all the available information that they could get about the school's waste issues and use that to create a plan of action to reduce the amount of rubbish going to landfill. At the beginning of the year, the EC leaders asked several adults for information and ideas for the initiative, including the EC key teacher, the school's PM, other school's EC leaders and the WasteWise facilitator. EC leader GL1 explains what they were trying to do:

We knew there was a lot we didn't, like, you don't know what you don't know, kind of thing. So we asked a bunch of people to help us. The PM was really helpful, he knew all about our waste at school and he had worked at other places that had recycling and stuff so he had a lot of ideas and suggestions. Talking to students from other schools was really helpful too - we learned what they had at their school so we knew we could get it working here.

However, the EC leader GL2 admitted they did not speak to the principal until later in the year because they believed they had all the relevant information needed to formulate a practical waste reduction plan. EC leader GL1 reported:

We started our proper communication with him [the principal] later on in the year anyway. I don't know, he should have probably told us about the plan [five-year campus building plan]. I think if it is something to do with our school campus then like everyone in the community should know about it, and then we would have known as well.

The principal was aware of the importance of the EC waste station plan fitting into the five-year plan, however, described the plan as an "evolving plan changing all the time as problems arise" and therefore was not willing to share the plan with students at Grayslake College. The principal expressed concerns about students not having enough understanding about the school's policies, procedures and politics to fully understand the plan, even if he did share it.

The adult can sometimes help them with that thing [the five-year plan] or the adult can just say, no, that is not a good idea, no, don't do that because that is going to annoy some people or, you know, before you go and organise that, you've got to be aware of X, Y, and Z. They've got experience so their whole idea is to provide a support mechanism around the students to help them. (Principal)

The principal continued sharing a conversation he had with the EC leaders at the end of the waste initiative, when he spoke about the five-year campus building plan for the first time:

It was really interesting we had a conversation with them because they had a goal about putting in a couple of bins and I suppose part of my thing is we've got a bigger picture of how we are redeveloping the entire school and whilst that is a bit frustrating because that is longer term than the students, like the students want to do something next few weeks or few months whereas I'm going, actually, this is a five-year project.

But it was really exciting. I showed them the plan for the entire school over the next five years and said look this is what we are looking at doing and I said basically this is why I don't want to rush in and put bins in the quad because we might be bulldozing the entire quad and rebuilding …unfortunately for somebody like GL1, she will be gone [leave school]. GL2 will still be here.

But they were really excited and they instantly got the big picture, you want to redevelop all the grounds across the entire school. To have active student voice in that, around issues like environmental and so on, it's awesome.

While the principal's perception was that the EC leaders were excited to hear about the plan, during the end-of-year interviews the leaders shared different feelings. All the EC leaders felt disappointed that the principal had not shared the plan with them earlier in the year. EC leader GL2 explained:

> At the start of the year we had planned out what we were going to do each term and educating the school that was also in time for the bins. Once we realised the twenty year plan was in place it was too late to book an assembly slot and do all the stuff that we wanted to in the last term which made it quite difficult because I felt like we lost a lot of time in that sense.

EC leader GL1 added:

> And if we had known about it at the beginning of the year, we would have had like a more long-term plan approach, like had committees with vegetable gardens, like make our plan more ambitious to include organic as well as recyclable stuff like that and get a lot more student interest and have like a formal plan and then submit that to him because we just started off with bin stations, that's a good way to start. Really, the entire plan was kind of made not possible.

Despite the frustrated feelings and sense of wasted time and effort, one EC leader felt positive for future waste reduction initiatives. She explained:

> Well, there wasn't student input into the design we were presented with but I think that in the future, seeing as we talked to him about our plans, that we could have a significant impact if we present formal proposals from the environment group's perspective. (GL3)

The EC leaders strongly believed that they could have had greater success bringing about pro-environmental behaviours if they had known about the five-year plan at the beginning of the waste reduction initiative.

5.3.4 Barrier - When adults do not agree

The final major barrier the EC experienced during their one-year waste reduction initiative was attempting to gain acceptance of their plan by adults who had different ideas of what success looked like. The EC leaders perceived that all the adults they engaged with during the year were keen for the students to succeed. However, each adult had different ideas of how and when actions should be taken. In the end, the EC leaders were unable to create a plan that all adults would agree to. The principal, when reflecting upon the initiative, referred to the EC leaders as being "the piggies in the middle" referring to the difficulty of coming up with one solution for several disagreeing parties.

The EC leaders began the year with several expectations about the waste reduction plan they were going to create and hopefully enact during the year. The leaders believed their plan had to be easy to enact, financially viable and be able to be measured for success. During the initial planning stages, the EC leaders worked closely with their WasteWise facilitator to make sure that the plan was based on best practice, and their school's PM to ensure that the grounds crew and cleaners would be able to

empty, clean and maintain the bins. The EC perceived both of us to have similar goals and expectations as they had.

Reflecting on their planning process, the EC leaders reported not knowing what the principal's vision for the school's waste systems would be. EC leader GL1 reported, "We'd never heard his opinion on the environment before and we knew he is a new figure in the school and it was kind of nerve-wracking but we had a lot of support from the property manager and other teachers."

It was made clear at the first meeting with the principal and other supporting staff, including the supporting teacher, the PM and the WasteWise facilitator, that not all people in the room agreed on what was the best way to implement a waste reduction system. As indicated in previous sections of this chapter, the principal had concerns about the look of any proposed changes to the school's grounds. This meant that the plan the EC leaders proposed, and that the PM agreed would work best for the grounds crew and cleaners, did not satisfy the principal's expectations. The PM explained, "The principal wants more of a modern look than the girls [EC leaders] priced out." The leaders were told to find more suitable looking bins or other waste station options before presenting their ideas to the principal again.

Over the remaining three months of the school year, the EC leaders presented two additional waste station options to the principal and supporting staff. However, each time the plan only satisfied one of the key players. The result of the final meeting was a stalemate between the PM, who wanted waste stations that were easy to move and clean, and the principal who wanted fixed bins that adhered to his envisioned professional, modern style of the future campus improvements.

5.3.5 Summary of Research Question 2

Several enablers and barriers were experienced by the EC leaders throughout the whole-school change initiative. The EC leaders reported that despite the expectation that all environmental actions taken in the college be student-led, three key adults offered both practical administrative support and emotional support. Their unsolicited effort acted as confidence builders and emboldened the leaders to approach less engaged people such as the principal.

A reported barrier to the success of the waste reduction initiative was a lack of engagement by the general EC members in the planning and promoting stages of the waste stations. A consequence of the disengagement was a decrease in attendance at meetings and a growing discontent among the members about the quality and commitment of the leaders. This ultimately resulted in the only remaining leader the following year to fail in her re-election bid as EC leader.

An unanticipated barrier was the withholding of critical documents and plans by the school's administrators about the future redesign of the school campus. This information was only shared with the EC leaders at the end of the year after they had presented three waste station options. The principal and EC leaders had differing perceptions about why this information was withheld and its role in the failure of the leaders' proposals.

A final barrier the EC leaders experienced was attempting to accommodate the wants of key staff who had conflicting ideas of what a good waste station consisted of. The EC leaders ensured their plan suited the wants of the PM, a staff member who the leaders found easy to talk to and reported feeling like equals with. However, the principal, a person the leaders referred to as the authority at the school, was less easy to approach and therefore the leaders struggled to accommodate his wants during the final month of the initiative.

5.4   Analysis of the findings for Research Question 3

Research Question 3 focused on analysing how the EC students attempted to enact changes to waste practices within their school. The leaders created a two-year plan for the waste reduction initiative. The first year consisted of working exclusively with the school administrators and key supporting staff. The EC leaders believed that it was important for the school principal, because of his role in running the school, to embrace the waste reduction goals and plans. Also, during the first year, the leaders had hoped to purchase and install two waste stations on the school campus. The plan for the second year was for the EC to engage all students and staff in education around the purpose of recycling, and to monitor the waste stations. The EC's behavioural change strategy for the first year, purchase and install waste stations, fits well with the SPT model and its inclusion of materials as one of the three elements that impacts on a practice. The second year of their plan aligned with the TPB as there was a plan to install signage on the bins and include proper usage of the stations into a school rule. However, due to the barriers reported above, the waste reduction initiative did not proceed past the first year.

5.4.1   Behavioural change: Recruiting support from the top

The EC leaders identified the most important first step to behavioural change was getting the school's administration to identify waste reduction as a school-wide focus. The leaders hoped that the principal's support would include creating waste reduction systems and policies that would support the EC's future behavioural change plans.

The EC leaders all agreed at the first meeting of the year that any large-scale behavioural change initiative in the school would need to have the support of the school's principal. During the first 12 weeks of the school year, the EC leaders focused on researching the school's waste situation, hoping to create a persuasive argument for the need to change the waste systems and behaviours in the school. The excerpts below highlight the leaders' concerns about being able to get the principal on board:

> I think they try [school administrators] and make the school look good in academic terms
> instead of environment. I think their goal is to make the school quite high in achievement
> standards instead of kind of environmental standards. I think our school doesn't really want to
> be seen as a clean green school, more [that] everyone passes. (GL1)

I think we need to convince some of the senior leader team or the teachers about the impact that it [waste] has got in our school environment, the money that is spent. I think we need to push. (GL2)

I don't think they [school administrators] would be like, oh, yes, let's help you guys devise a rubbish system. I think they would be like, well, that sounds ok, you can deal with. (GL3)

Another reason the EC leaders gave for a top-down approach was the need to purchase the waste stations. Despite the EC's success in raising enough funds to pay for two waste stations, the leaders understood they would not be able to access the funds for purchases, this had to be done by a staff member. None of the school staff interviewed for this study knew how the EC leaders would go about making purchases with the funds raised. The PM's comments were indicative of the other adult participants, "It would just be easier if I [PM] or their teacher make the purchases."

Overall, all participants believed it was important to have the principal's support for the waste reduction initiative before attempting a school-wide, pro-environmental behavioural change campaign. The general consensus among the participants was that the principal was key to the success of the initiative. Or in the words of the EC's supporting teacher, "If the principal doesn't support what they [EC] are doing, then it will never work" (GT1).

5.4.2 Good intentions fall short without a means to take action

The EC strongly believed that a waste system that included a recycling collection was important to put in place prior to engaging students in a behavioural change campaign. The EC leaders recalled their feelings after sorting 115 kg of the school's rubbish into landfill, recyclable and compostable materials. Despite having spent five hours sorting the waste with other EC members and junior science students, all the material was returned to the landfill bin. EC leader GL1's comments were consistent with the other leaders:

After doing the waste audit, it all went in together [to landfill], it all seemed pointless separating it in the classroom for it just to become one big pile again. I mean it's great that everyone learned what could be recycled and composted but then we just put it all in the bin anyway. It really made me mad.

Another EC leader added:

Yeah, because if there is no incentive to separate your rubbish then people are just going to go, oh, what's the point in reducing waste if we don't even have bins in place to separate it? So that's why we thought it was vital to have the bins in place first and to actually have an incentive to reduce waste and separate it to two different bins. (GL3)

The EC leaders believed if they were successful getting waste stations installed on the school campus during the 2016 school year, it would enable the following year's EC leaders to start facilitating pro-environmental behavioural change at the school. However, due to several barriers described above,

the principal decided it was not an appropriate time to begin recyclable materials collection in the form of waste stations on campus. Following are the EC leaders' explanations for the outcome of the year's waste reduction initiative:

Well, he [Principal] wasn't actually going to do anything like recycling initially. He was going to keep the small general waste bins so no separating of waste at all. I think if he does choose to have bin stations if they've got recycling then obviously that will be our input to enforce that. (GL2)

I feel like he [Principal] was definitely keen to take our idea on board. He was definitely keen for the bin stations, it was just a matter of timing and the design. (GL1)

So, I think it will happen eventually, just with the timing of it [waste reduction initiative], we're not too sure if in the future the design is what we would have wanted. We are not too sure we will get that but anything is better than nothing. (GL3)

5.5   Summary of the findings

This chapter has presented the findings of the second case study school that participated in this study. The first research question of what the EC students' perceptions and understandings about their role as change-makers within their school were revealed that students believed their school to be behind the accepted standard of waste diversion systems in secondary schools, and that it was the sole role of the EC to bring about whole-school, pro-environmental behavioural change. However, the EC leaders, as well as other key staff in the school, reported the role of the EC was limited to presenting action plans to the principal. Only the principal had the authority to allow the EC leaders to make any lasting changes to the school's systems or campus.

For the second research question, exploring the enablers and barriers for enacting change in the school, this research identified four key findings:

1. A major enabler was the unsolicited support of key adults who offered valuable practical skills, experience and emotional support which boosted the EC leaders' ability to create and present executable waste reduction plans to the principal.
2. An unanticipated barrier was the lack of opportunities for the general EC members to participate in the planning and presenting of the initiative. The members became disengaged from the goal of waste reduction and questioned their leaders' abilities and motivation for leading the initiative.
3. Another barrier the EC leaders experienced was their lack of access to key school plans and policies. EC leaders were, therefore, unable to create an action plan that could work within the school's long-term strategic plans.
4. The final major barrier to facilitating pro-environmental behavioural change the EC leaders experienced was the difficulty in working with key staff who had different visions for what a successful waste diversion system looked like. The staff expected the EC leaders to create a

plan that made everyone happy. Despite working for six months and presenting three possible plans, the EC leaders were not able to get all staff to accept any one plan.

The third research question, exploring how the EC students went about attempting to enact changes to the waste practices in their school, presented two key findings. The first was the EC leaders focused on a top-down strategy, as the leaders believed that, for any long-term change to work, there needed to be support from the most powerful people at the school. The second focus was the perception that without a bin system that allowed for waste diversion, no amount of learning or emotional buy-in would create actual behavioural change.

Ultimately, the EC leaders were not able to get the principal to see the value of the waste reduction initiative and were unable to get permission to install waste stations for recycling collection on the campus. Grayslake College's monthly waste figures show that there was no short- or long-term reduction in the amount of waste the school was generating. As a consequence of the lack of waste reduction the EC was able to bring about by the end of the year, the EC decided there was no way forward and ended the initiative without making pro-environmental behavioural change on campus.

The final case study is presented in the next chapter.

Chapter 6: Mundelein College

This chapter presents the data from Mundelein College's waste reduction journey during the 2016 school year. It begins with a detailed description of the physical and social character of the school in which pro-environmental change was to be introduced to give the context of the broader social milieu in which change was being introduced.

The chapter then reports nine key findings as organised by the research questions. Semi-structured and focus group interviews generated data about the aspirations, goals, expected enablers and barriers to success. Six interviews were conducted with the EC supporting teacher (MT1), associate principal (MA1), as well as the EC leaders and general student members. In addition, data were generated through observations and document analysis on unanticipated enablers and barriers. Finally, data were gathered on four waste reduction initiatives the EC led or participated in throughout the year.

6.1 Positioning the environmental action

Mundelein College is a Catholic girls' secondary school located in Auckland's central suburbs. It is a Year 7 to 13 school catering for students aged 10 to 18 years old. It has 52 teachers and approximately 750 students.

The college was established in 1928 and based upon Catholic beliefs and gospel values. Over the last 90 years, the college has focused on three desired outcomes for the students: academic success; a strong religious foundation; and facilitating empowered women.

6.1.1 A guided tour of campus

Overall, the school gave the impression of a tight-knit community offering tidy spaces for educational and social activities. The campus design and style suggest a strong focus on student enrichment. Mundelein College fits snuggly between a primary school and a boy's Catholic college in a well-established neighbourhood. The campus is made up of three main buildings, all newly built or remodelled within the last 30 years. Two of the buildings house traditional classrooms and administrative offices, while the third building consists of several multipurpose breakout spaces. These were used as needed by teachers and groups of students throughout the school year. The outside spaces of the campus were limited to a small grassed sports field and an asphalt court.

Despite the compact nature of the campus, Mundelein College offered a lot within its limited space. The asphalt court was used daily for sports and gym activities, but also hosted the school tuckshop and movable tables and benches. This area was often where the school's EC held their leadership meetings throughout the 2016 school year. While there were few areas for students to gather in large groups, the campus grounds offered many small spaces for students to have lunch or study outside.

Green spaces could be found throughout the campus. Small gardens, maintained by any inclined staff member or student, were scattered around the grounds. A corner of the campus consisted of a small environmental area, including three vegetable beds, compost and worm bins. An unused shed adjacent to the gardens had been designated as a future outdoor classroom and was currently being used to store tools and equipment for the EC.

6.1.2   Special characteristics of the school

Mundelein College is ranked in the top 20 secondary schools in Auckland. On average, 80% of the students achieve passes on NCEA exams, the New Zealand secondary school qualification system. This is well above the national average, and a point of pride for the school.

While the school no longer requires all students to practise the Catholic faith, Mundelein College promotes the importance of spiritual values regardless of the students' ethnic and religious backgrounds. All educational and social activities are encouraged to promote faith, love, social justice and stewardship of the people and the environment.

An extension of the school's religious values is the desire to "Empower young women to make a difference in the world", as stated in the schools *Strategic Plan*. This was encouraged through many non-academic opportunities the school offered for the students, including a jazz band, debating team, and opportunities to compete in the National Young Designers competition and the Codeworx Challenge. It was hoped that through these experiences students would gain confidence, connect with their communities and contribute to society.

Mundelein College promotes itself as more than a typical New Zealand school. Its holistic approach to education guides the school as it promotes academic excellence, a strong sense of spirituality, and the development of skills to support positive action both in school and beyond.

6.1.3   History of environmental action

Mundelein College had been engaging in waste reduction practices since 2012 when paper recycling was introduced to all classrooms and offices. In 2015, Mundelein College began participating in the Auckland Council WasteWise programme and made the commitment to expand the waste reduction learning and waste diversion systems in the school. General recycling collection was introduced later that year.

As part of the school's commitment, 'Vic' (MT1), the supporting teacher for the EC, was given one hour's non-teaching time a week to assist EC students, activities and to promote environmental learning in the school. An environmental focus was also included in the school's vision statement and curriculum strategy in an effort to ensure the continued inclusion of EfS in the future.

6.2 Analysis of the findings for Research Question 1

Research Question 1 focused on the EC students' perceptions and understandings about their role as change-makers within their school. The key findings were student perceptions of: 1) Their motivation for driving change; 2) taking a role in facilitating whole-school change; and 3) being the voice for environmental action.

6.2.1 Motivation for driving change

A main outcome for students participating in the EC was to take personal action for the environment. Students described the positive feelings they got from taking action, and knowing they had an impact. They also identified the need for positive environmental role models at the school and wanted their actions to inspire their peers into action.

6.2.1.1 Personal responsibility for positive impact

Student EC members reported that they wanted to have a positive impact on their school and wider community's environment. Each member described their own drive for joining the EC. These included the need to right previous environmental wrongs and making sure everyone has access to a healthy physical environment. The following are excerpts that illustrate two of the students' personal motivations:

> *I need to do this because if I don't then we are really going to muck up our environment. It is going to result in no clean air … we are part of the problem and so therefore we need to be part of the solution. (MS3)*

> *The environmental group is a social justice group as well … there are people we have to help but the environment is also something that we need justice for. (MS5)*

These comments showed how the EC members felt they had a personal responsibility to take action for the environment, describing serious moral issues with not taking action. They highlight two different views from a diversity of motivations the students brought to the EC.

A common theme that arose from the EC and students' descriptions of their personal motivations and goals for the EC was the positive emotional consequences they got from taking action. MS1's and ML2's comments were indicative of others:

> *I feel like let's actually do stuff out there. Yeah, I think the main thing is for the students or for me at least it is like I want to get out there and have an adventure and do stuff out there. (MS1)*

> *I felt inspired and excited after working with others to clean up a beach and doing other things. (ML2)*

The EC members' desire to take personal action was also evident in the weekly meeting agendas. Each meeting had a time set aside for discussing "next steps" or "action". Some examples include: "painting the environmental shed"; "cleaning out the worm bins"; and "conducting a waste audit".

It is interesting to note that not all of the actions the EC students took during the year related to the EC's goal of waste reduction. The action of painting the shed had the highest number of participants of all the activities during the year, and was described as "the most fun and all got into it" (MS3).

EC leader ML1 expressed "'feeling guilty' when we [EC] didn't actually do what we had planned at the meetings". For student MS2, she described her personal struggle to balance school, home and social responsibilities with her desire to participate in EC environmental actions, reporting "sometimes I know I just can't do it all. It's hard to say I just can't do it [environmental action]".

These students reported strong emotional drivers for their environmental actions. They saw the EC as a group that would enable them to have "made a difference" (MS1). Accomplishments and failures of the EC were seen by many students as their own personal successes and failures for the environment.

6.2.1.2   The importance of being a role model

Role modelling was expected to be an important strategy for encouraging positive behavioural change within the school. Of the eight students and three staff participants at Mundelein College, seven referenced the importance of role modelling pro-environmental behaviour. This strategy was seen to normalise a pro-environment culture throughout the school, and as an alternative to creating school rules around environmental behaviour.

At an EC meeting early in the school year, members were asked to share what behaviours the EC should model and why it was important. The group came up with: recycling; disposing of rubbish in bins; and using re-usable bottles, cups and food containers. Three key points from the meeting are captured below:

1. The need for all EC members to represent the Environmental Council's values at all times, on and off school grounds;
2. Be friendly and positive when discussing these behaviours with people;
3. The more times a day someone sees a behaviour, the more they will think it is just "what we do here". (MS1)

Role modelling pro-environmental behaviour was seen as a good alternative to creating more school rules. EC students referred to the rebellious nature of their peers, and thus the possibility of reinforcing bad behaviour if actions such as not recycling became a punishable act. For example, EC member MS2 recalled an act of rebellion she had experienced earlier in the year:

> *The teacher came up to the girls and told them to make sure to throw their rubbish in the bin. She told them off because there had been a bunch of rubbish on the ground the day before. The students threw everything on the ground the minute she [the teacher] walked away.*

Teacher MT1, also reported similar situations, "The students, to some extent will break the rules just to break the rules."

This belief about student rebellion, and the possibility of reinforcing bad behaviour by "telling people off" (ML3), strengthened many of the EC members' and leaders' belief that they had an obligation as members of the EC to be role models of pro-environmental behaviour.

6.2.2 Facilitating whole-school change

Students reported part of their responsibility as members of the EC was to promote whole-school pro-environmental behaviour change. This included providing information about environmental issues and facilitating other students' personal responsibility for the environment.

All EC leaders and members espoused it was their role to change the way their peers thought and acted towards the environment. They believed they needed to make people care about the environment before they could get people to take action for the environment. Three EC members explained:

> I think there is a general perception that it's not their problem. We need to make people care because every year when we do the waste audit, it is still really bad and how do we get the whole school to kind of care enough to take up 5 extra seconds to say, oh no, it goes in this [recycle] bin and put it in the right bin. (ML2)

> It's about awareness of issues of waste and sustainability and reducing and somehow make it personal, so that everyone sees that it is everyone's problem and everyone can make a change and needs to. (MS1)

> Yeah, more people need to know about the consequence so it's not just, oh, You should do this, it is yeah, We should plant trees, yeah, We should pick up rubbish. (MS5)

When asked to describe the best way to change their peers' attitudes towards the environment, the students responded with two distinct strategies: providing information about environmental issues; and running activities that elicit a strong emotional response. EC leader ML2 shared some EC activities she believed would be informational for her peers:

> I know we [EC] talked about having stations around the school – for recycling and for rubbish like clearly labelled so everyone knew where things were meant to go. So it is just easier for the school as a whole to understand … it enables people to be aware of what they are doing and where the rubbish is going and things like that.

> Last year after our waste audit, we got a whole lot of packets and put them onto string and hung them up in the atrium for like a visual for the students to see how much rubbish they put into landfill bin every day and I think quite a few people took notice of that and were like, okay. (ML2)

Using visual cues as a method to educate their peers was a common strategy used in many of the EC actions during the 2016 school year. The EC leaders believed their peers took more notice of information presented in a visual format than from oral presentations during assemblies and morning announcements, and therefore would lead to more students taking pro-environmental action.

The second strategy for changing their peers' attitudes toward the environment in an effort to lead to more pro-environmental action was to elicit strong emotional responses about environmental issues. EC leader ML3 described how the EC thought that their waste reduction activities had been boring and may have turned students off the topic. In the following excerpt, she gives examples of how an anti-litter activity the EC conducted was meant to engage their peers on an emotional level:

> *During the two weeks of not having staff pick up rubbish, we hoped the students would get so sick of it that they started picking it up themselves. We thought it was the shock factor they needed. They would be looking at what rubbish accumulated and it would disgust them.*

She also shared about her future plans for a video she wanted the EC to create:

> *It would be a video of people stuffing rubbish in hole in table, people will not walk to bins. We need to shock or make fun of or dramatise things to get people's attention.*

EC leaders and members felt the need to "touch" (MS5) each of their peers, either with information or with activities that had an emotional punch. There was a strong belief that, if their peers understood how their behaviours were affecting the environment, and they connected on an emotional level with the problem, they would be more willing to change behaviours such as littering, using single-use bottles and take-out coffee cups.

6.2.3 Being the voice of environmental action

The leaders of the EC perceived their role as being the *voice* for environmental issues and action for the general members of the EC and the wider student body. There was an expectation by the EC leaders that they would be listened to by staff, therefore, potentially influencing any decisions staff made regarding environmental actions in the school.

6.2.3.1 Student voice: The role of the EC leaders

All leaders of the EC believed that they had been chosen to be EC leaders because of their passion for environmental action and because of their participation in previous year's EC activities. There was a consensus among the leaders that they had been selected because they represented the values and goals of the other EC members. Leader ML1 described her strong connection with the other EC members, citing a long history of environmental values and action:

> *I've grown up with a lot of the girls on the council. I mean most of us knew each other from primary school. We would all feed the worms and collect the recycling, so it was natural that we all moved together and joined the environmental group here. We all want the same thing*

[for the environment] so I feel like I was a good choice to be a leader for the group … I'm just helping everyone here do what we all want to do.

Leader ML2 also pointed out that her older sister had been an EC leader, and had been bringing her to EC-organised events for several years. An extended length of participation was viewed as a fundamental requirement for students wanting to represent their peers on a council. They did acknowledge a disconnect with younger members of the EC who they had not "grown up with" (ML1) but did not think this presented an issue of representation.

The EC leaders provided explanations for what it meant for them to be the *voice* of the EC. The most common concept described sharing other peoples' thoughts and decisions. Leader ML1 gave an example of a time the teacher MT1 asked her to get some ideas from the other EC members.

I was told we needed some ideas for what to paint on the shed so at the next [student EC] meeting I asked everyone to write down some ideas. Then we voted on the best one. At the next meeting with Vic [MT1] we told her what we had decided. I mean I didn't think it was really important to paint the shed … but at least Vic let us [EC members] come up with the idea.

The role of EC leader went beyond being a *voice* for the EC members, it also included being a voice of the staff. Leader ML1 expanded on her role in deciding a mural theme, reporting "We told Vic [MT1] what the group had decided. She didn't like it though, saying it would be too hard to get the paint and too difficult of a thing to paint." The leaders then reported back at the next scheduled student EC meeting that the group's choices were not practical, and the shed would be painted according to MT1's decision.

The system of a few students representing a wider group of students was supported by MT1 and associate principal MA1. Both staff described the system as "a time saver" (MT1), citing a lack of time to hear every EC member's opinion. They believed that it was a valuable experience for EC leaders to be the *voice* for others and did not doubt that the leaders were accurately representing the EC members.

6.2.4   Summary of findings for Research Question 1

EC members referred to personal and social motivations for their participation in a school change initiative. Students valued the positive feelings they got from participating in organised environmental action, but also described feelings of disappointment and guilt for periods of inaction or lack of follow-through on a planned activity. In addition, there was a strong desire to inform their peers of environmental issues, make connections between actions and environmental consequences, and espouse empathy for the physical environment. The students overwhelmingly chose visual over oral formats to connect with their peers. Photographs were used to educate, physical rubbish was used to solicit emotional responses, and role modelling was used to suggest how pro-environmental behaviour was the cultural norm of the school.

The EC leaders expressed an even greater motivation to be the conduit of information and ideas for the school's administration, EC members and the wider student body. The leaders, working within a set power structure within the school, acted as the voice for both students and adults. This in theory allowed the leaders a unique view of what both the school's administration wanted, in terms of the school's future environmental action, and what the EC members wanted to participate in. However, as the following sections in this chapter will recount, the leaders were not always connecting with their peers and the administration and, therefore, reported feeling disengaged from the wants and desires of both groups.

6.3   Analysis of the findings for Research Question 2

Research Question 2 focused on analysing major enablers and barriers to empowering students to enact a change initiative in their school. A major enabler was the informal conversations between student EC leaders and key staff outside of official EC meeting times. In addition, the findings identified three major barriers: 1) a lack of planning time for EC events; 2) the difficulties of being a leader with limited influence; and 3) difficulties engaging the whole school in the behavioural change activities.

6.3.1   Unscheduled conversations: Unscheduled does not mean unimportant

EC leaders and supporting staff reported the importance of informal conversations "between friends" (MT1), that took place outside of scheduled meeting times, as a major enabler to enacting change in the school. These conversations often generated ideas, decisions and reflections critical to the waste reduction initiative. All participants also reported increased positive feelings about the change initiatives because of these informal conversations.

6.3.1.1   The value of unscheduled conversations

All participants perceived the greatest enabler for the success of EC initiatives was the importance of informal conversations with each other beyond the professional requirements of school. With the exception of the accounts manager, all the participants knew each other prior to their joining the EC. The EC leaders were able to give many accounts of "hanging out" (ML2) both in and outside of school. Supporting staff MT1 and MA1 also reported having a friendship outside of work before they took supporting roles with the EC.

An outcome of these friendships was that the participants regularly discussed EC business outside of school time. EC leader ML2 recalled an example of this:

> We [ML2 and ML3] go to each other's houses all the time to hang out and we almost always bring up the council. Ysabel's [ML3] mom is always asking us what we are doing [in the EC], so we probably talk more about it outside of school than we do here.

EC leader ML3 gave another example:

Lavender's [ML2] sister is in university studying environmental science, and [was] the enviro-council leader when we were younger, so whenever she's home we start talking about that stuff. Some of our best ideas have come from those talks.

In a similar fashion, supporting staff, Vic (MT1) and the associate principal (MA1) made an effort to have lunch at a local restaurant at least once a fortnight during their five-year tenure at the school. While these lunches were described by MT1 as "being a chance to catch up on each other's lives", she identified a similar outcome as the EC leaders, reporting "Cic [MA1] shares my passions for making the school a more eco-friendly place … several of the biggest environmental council activities were planned and approved during lunch." Teacher MT1 believed their conversations during these lunches often proved more successful than conversations during scheduled meeting times at school. MT1 reported the lunch meetings "enable me to circumvent all the crap [at school] and make it [decisions] happen quicker".

6.3.1.2 Expressing negative emotions without negative effects

Another outcome participants reported from the informal conversations was the ability to share and de-escalate negative feelings about EC-planned actions, and governance. Each participant was able to recall a time throughout the year when they felt "frustrated" (ML1, ML2), "overwhelmed" (MT1) or "distracted by other stuff" (ML3) because of their roles in the EC. In each instance, students and staff reported seeking out each other to talk through their feelings. An example of these supportive conversations was reported by ML1:

I had just come back from a MAD [Make a Difference] meeting about palm oil. I wanted to do a whole big thing at school like get the tuck shop to stop selling anything with palm oil in it, and posters and stuff. But Vic [MT1] shut me down, it didn't fit in with what she wanted to do. I was really angry, why did they [staff] send me to MAD if they didn't want me to do anything? But it's not like I can say this to anyone [staff], so I just called Lavender and vented. It was good because we had a [EC] meeting the next day. Talking to ML2 helped me focus on what we could get done.

A common theme throughout the described informal conversations was the feeling that they could be honest about their feelings, sharing negative as well as positive feelings. There appeared to be trust between the friends that things said during the informal conversations would not be repeated at school, a place where they could "get in trouble" (ML1) for expressing negative feelings.

6.3.2 The limitations of planning and actioning behavioural change during lunch

Students and supporting teachers perceived a lack of planning time as a major barrier to enacting change in the school. The work of the EC fell outside the school's curriculum focus, and therefore all meetings and EC actions were required to take place outside of class time. The majority of the time available was spent planning and actioning behavioural change strategies and, consequently, there was little time left for evaluations and reflection.

6.3.2.1 How to fit in environmental action

All three EC leaders agreed that a major barrier to the EC facilitating lasting behavioural change was the lack of time allowed for students and staff to engage in EC business. The EC was considered a co-curricular activity offered to students at Mundelein College. While the school's *Strategic Plan* identified co-curricular activities as important to "Empower young women to make a difference in the world", every participant interviewed for this study at Mundelein College believed academic obligations were valued more highly than the EC. The EC leaders went even further, describing the EC at the bottom of the school's priority list. EC leader ML3 described her perceived order:

> *First academics, sports, cultural stuff like haka, then maybe stuff that looks good for university entrance like band and debate club. Then the environmental council. I mean imagine what we could get done if Vic [MT1] put as much time into us [EC] as she did coaching netball.*

Due to the constraints of scheduled academic courses and activities, the EC was limited to two scheduled meetings a week. The first meeting was for EC leaders and supporting staff only and took place during a 15-minute morning break time. The second meeting included general EC members as well as leaders and MT1. This meeting took place during a 35-minute lunch break.

In total, the EC had 50 minutes a week allocated to facilitate lasting, whole-school behavioural change. However, due to regular conflicts with other school activities, including exam practice, drama presentations, and sporting events, the EC averaged only three EC leader meetings, and two general EC meetings a month for the first eight months of the school year. No EC meetings of any kind took place during the remaining months due to the majority of the EC members being on study leave. Teacher MT1's comments were indicative of others:

> *If we could exclusively focus on this [waste reduction], we'd have it done in no time. But we've got the exams, they've had Stage Challenge, they've had all these other things that happen and they dominate their lives for that period of time.*

6.3.2.2 What gets left out

A consequence of the limited time allotted for EC business was that meetings focused on planning and actioning behavioural change strategies, with no time for evaluating success or failures, or for meaningful reflection. EC leader ML2 reported her belief that the limited meeting time affected what they were able to accomplish during the year:

> *We didn't have enough time … we would plan only for the following week's activity and not think about the year plan. Most of the meeting was Jasmine [ML1] saying this is what we are going to do this week and we just do it rather than discussing.*

At the end of the year's behavioural change initiative, none of the three EC leaders were able to say if any of the strategies they used during the year were successful. EC leader ML3, speaking for the group, said: "I guess we never talked about that."

6.3.3   The difficulties of being a leader with limited influence

An unanticipated barrier to student-led change in the school was the direct and indirect influence of school staff on the EC leaders. Issues such as what was and was not considered when choosing the leaders of the EC, and the requirement of the leaders to ask permission from a staff member before taking any action, had a negative impact on the EC leaders' ability to lead behavioural change actions.

6.3.3.1   What was and wasn't considered when choosing the leaders

The school policy regarding selection of council leaders was that any student wishing to be considered for the role must submit an essay and name three councils in which they would like to take a leadership role . The dean and supporting teacher for the council then chose students who "are motivated, have leaderships skills, and are in good academic standing" (*Student Handbook 2016*) to lead the council for the year. Administrator MA1 expanded on this process:

> It is important to pick the right girls because girls listen to other girls. In the environmental group this year we had some girls who are academically able … but the direction that we [MT1 and MA1] were going in wasn't the direction that the girls [EC leader applicants] wanted to go. We chose the three that would be the best leaders for the group.

MA1's description of the criteria for choosing council leaders did not include a requirement that the student had to have previously participated or had positive relationships with the other students on the council. In the case of the EC, ML1 had never been an active member of the council before and had ranked the EC as her third choice to lead under the sports and cultural councils, two councils that she reported "had more respect in the school".

While the exact criteria for choosing the EC leaders were not known to the members, four reported perceiving that the leaders were chosen solely for their ability to do what they were told. MS3's comments were indicative of others, "Vic [MT1] knows all the leaders from netball. They meet with her all the time and just tell us what she said we need to do … they don't lead anything really." The students perceived that the EC leaders were "not chosen for us [general EC members]" (MS1).

The three EC leaders also reported concerns about their ability to connect with the general members and motivate them into action. The leaders perceived this as the main reason for three of their planned activities for the year being cancelled. ML1 reported:

> It's hard to get them motivated [EC members]. The meetings are boring. They get bored and do not see why it matters … When I talked about rebuilding tracks and planting and doing all that sort of stuff but then no-one shows up, so we cancelled it. It was hard too because I don't know a lot of the younger students' names, so I couldn't send them reminders or stop them during break.

ML2 agreed with the statement above, suggesting, "Maybe we should have an environmental representative for each year group … they could bring ideas and concerns from their year level, little things that makes the difference [for leading]."

6.3.3.2   When the leaders have to ask permission

Another factor that had a negative impact on the leaders' ability to lead a successful behavioural change initiative was the lack of participation the leaders had in any EC-related decisions. It was standard practice at Mundelein College for a supporting teacher and/or a school administrator to make final decisions on all council actions. MA1 reported:

> *Adolescents being what they are they really need someone within the teaching body to be their voice for them and to organise them. As part of the senior management I can actually see some of the stuff that is going down and see why something [the EC leaders want to do] might not work.*

MA1 also reported the school was "adverse to taking big risk", equating allowing students to participate in decision-making as risk-taking. MA1 reported:

> *The religious character of the school is a double-edged sword. The religious nature of the school reflects the community and so the parents are often very protective. They've chosen the school for their daughters because of its smallness, because of its very nurturing environment and if they take risks they want it to be in a very small and safe way.*

> *So that is why it is hard to take big risks and why ultimately real empowerment is impossible I don't think until they can try things more outside of this environment.*

A consequence of the Mundelein College decision-making structure was that the majority of EC leaders' plans were denied. An example of this was documented on 14 March at the EC leader meeting. ML1 requested permission from supporting teacher MT1 to engage each class in school in a five-minute "recycling bin refresh" (ML1). This was denied because of possible disruption to in-class assessments. The leaders reported the lack of ability to make "even the smallest decisions" (ML1) as disempowering. EC leader ML1's comments were consistent with the other leaders:

> *I think I am empowered in the sense that I want to make change and I think it is important and I want to raise awareness, but not empowered as in by the structures by senior management. I don't feel empowered by them because we have no input and they don't really acknowledge us much or support us much.*

EC leader ML3 agreed, reporting, "I agree with Lavender [ML1]. I think I am empowered because I want to do something but there's a lot of things that senior management seem quite picky about so you really have to choose your battles."

Another outcome of EC leaders not participating in the decision-making process was the inability of the EC to take quick action. In several cases, it took weeks for the leaders to learn that their requests had been denied. EC leader ML1 recalled an example of the lack of timeliness in the decision-making structure:

Like the delays, so we would be communicating with the teachers about something and it just wouldn't happen and we would keep asking them about it but they wouldn't say anything. So we were essentially sitting there and being put off.

EC leader ML2 added:

Yeah, because I just remember you going into Vic's office and being like I'm here so can I email the paint lady and it would be every time. That went on for a couple of months and it never happened and eventually Vic came up with her own paint.

Everyone interviewed at Mundelein College reported the EC leaders were limited in their ability to take action, or as the associate principal, MA1, referred to it, "take a risk". The outcome of undemocratically selecting council leaders to lead, without showing previous ability to motivate their council members and without the ability to take action without express permission from staff, weakened the ability of the leaders to motivate and organise their peers. MA1 summarised her perceptions about the limited empowerment Mundelein College allowed of its student leaders: "Perhaps we hold on too much … Ultimately, while we try to support them in their initiatives, it is still within a very structured framework. So that is the limitation."

6.3.4   The enormity of whole-school change

EC leaders, members and supporting staff anticipated difficulties engaging the whole school in a student-led behavioural change initiative. Feelings of doubt around the possibility of success were reported at all stages of the initiative. As a consequence, waste reduction strategies that did not show immediate success in engaging students were quickly ended.

6.3.4.1   Perceived reasons for failure

When the participating students and supporting staff interviewees were asked to describe how confident they were that the EC's behavioural change strategies would reduce the amount of rubbish going to landfill, all participants believed the initiative had a less than 50% chance of being successful. The most common explanation for the lack of confidence was the difficulty in "making students care" (ML1). Most of the interviewees reported believing one of two reasons students would fail to change their behaviour: students not understanding how personal behaviour contributes to environmental destruction; and students perceiving environmental action was someone else's responsibility.

Five interviewees reported the largest barrier to whole-school behavioural change was making every student understand the direct consequences of their actions. Two EC leaders, ML1 and MS2, as well as two general EC members, MS2, MS5 and supporting teacher MT1, described the need to help the students understand the cause and consequence of their actions, as only when a student understood this, would they change their behaviour. ML1 described her perception of the problem as:

It's this notion that because we are New Zealand is like clean green that somewhere else has it worse. So now we are like, oh, why should I contribute like, you know, it's worse in China or somewhere else, but actually we all contribute the same. It's just that knowing.

MS5, a member of the EC for two years, had a similar response, "I think there is a general perception that it's not their problem. They think it's [environmental damage] just something that happens but people don't realise they are the ones contributing."

The second most frequently reported barrier was a perception that many students thought it was someone else's responsibility to take action for the environment. EC members MS2 and MS3 described the importance of social groups in the school and MS2 reported:

When it comes to groups here at school, people tend to make these groups more like labels, I'm part of this, I'm part of this, but you are not actually part of it, you aren't actually doing stuff. I tend to find that a lot of people think it is uncool if you're on the council [EC] and that you care for the environment. Therefore, you're like a nerd and they think you are not worth talking to kind of thing.

MS3 agreed, adding, "They understand that it's an issue [waste], but don't really see why they should be the ones to do it."

Regardless of which barrier the students and staff perceived as preventing whole-school behavioural change, none of the participants felt confident that anything that was planned for the year would totally address the issue.

6.3.4.2   Quick to quit

An outcome of staff's and students' lack of confidence in their ability to bring about behavioural change was the decision to use several strategies throughout the year to engage with the student population. As seen in Figure 6.1, there was no consistent group of strategies related to how to get students to act in a more environmentally responsible manner. Therefore, the EC year plan included five short-term actions, each lasting between a day and eight weeks, and only one extended action.
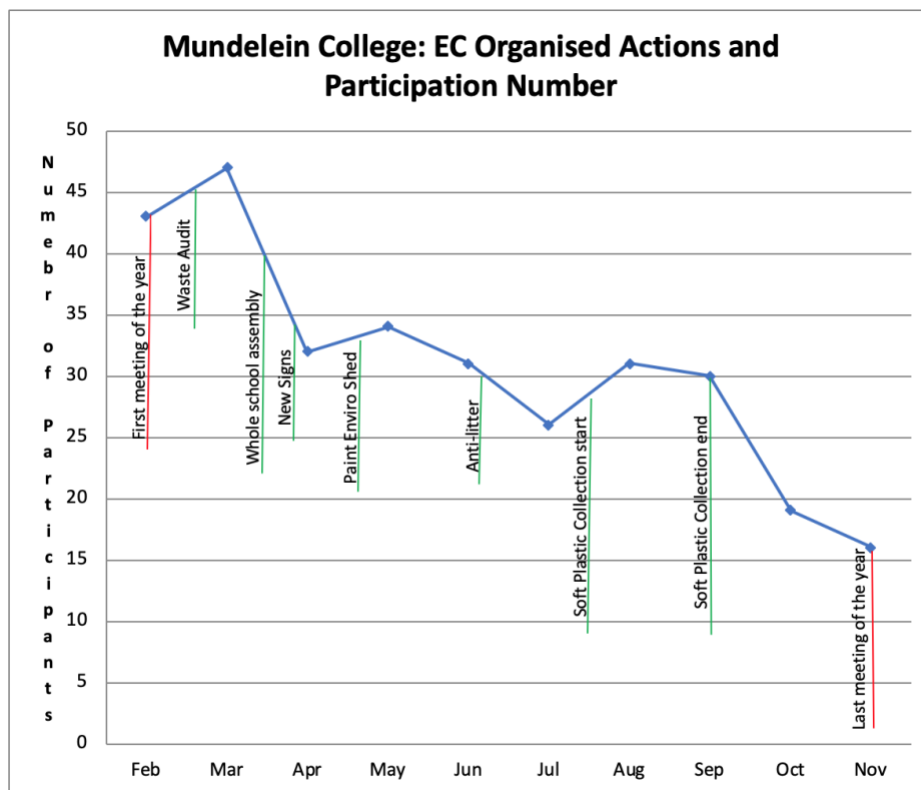
Figure 6.1. Mundelein College: EC-organised action and its relationship to attendees at EC meetings

Supporting teacher MT1 explained why she had decided the EC should have many short-term actions:

> *The problem is unreceptive students and we never know what will connect with them. My thinking was that if there were many different activities that one of them would register with a student. Anyway, students have really short attention spans. If we did one push through the whole year the students would get bored, so we have to keep things new and interesting.*

At the beginning of the waste reduction initiative, the EC leaders agreed with MT1; however, by the end of the year, they reported doubts about the strategy. When asked which of the six actions had been successful, the leaders reported they did not know the outcome of any of them. ML3 reflected that in trying to enact so many actions, there was never time to check if anything worked. She reported, "We would just move on to the next planned activity." While ML1 and ML2 agreed, both felt that it was more important to do as many things as possible and hope "something sticks" (ML1).

6.3.5   Summary of findings for Research Question 2

Staff and students experienced enablers and barriers to success throughout the year. The friendships many of the students and supporting staff reported having with each other were positive in terms of the informal conversations involved. These informal conversations were enablers and were more important than the discussions held during scheduled meeting times. Participants valued the ability to express ideas and feelings without fear of being reprimanded and the non-rushed atmosphere of these informal conversations.

Reported barriers to facilitating behavioural change in the school were more numerous than the enablers. Students and staff expressed that time limitations, and a perception that EC business was not as important as other school commitments, meant that planning and action time was severely limited, and post-action reflection was impossible.

EC leaders and general members also reported negative consequences resulting from the selection and limitations of the EC leaders. EC members, having had no role in the selection of leaders, did not perceive that the leaders were chosen to support them, but instead saw them as extensions of the staff control over the EC actions. This perception was strengthened by inability of the leaders to participate in the decision-making process.

The final major barrier that affected the planning and enacting of the waste reduction initiative throughout the year was the students' and staff's lack of confidence in seeing that success was possible. Therefore, a year's plan of several different strategies was attempted. However, there was no time for mid-project reflection, end of project data gathering and reflection on the success or limitations of any of the behavioural change strategies. At the end of the waste reduction initiative, neither students nor supporting staff were able to say if any of the year's six behavioural change strategies had better outcomes than others.

6.4 Analysis of the findings for Research Question 3

Research Question 3 focused on analysing how the EC students attempted to enact changes to waste practices within their school. All of the waste reduction activities the students organised were focused on changing the way students disposed of their rubbish. Activities were made optional for students and had a positive tone with the message that the suggested behaviour change will help the environment. However, there were two distinct approaches to engaging with students: personal practice and social practice. Each approach aligned with one of the two behavioural change theories that framed this study, the TPB and SPT. While none of the participants at Mundelein College had any understanding of either of the theories, the six waste reduction strategies used could each be analysed using one of the two frameworks.

6.4.1 Behavioural change one person at a time

The majority of the behavioural change strategies the EC actioned were focused on students' personal behavioural change, in line with the TPB. The goal of these campaigns was to change the behaviour of one "student at a time" (MT1). The strategies attempted to promote a more positive attitude towards the environment and provide knowledge to help individuals make positive choices for the environment.

Four of the five waste reduction actions focused on an individual's understanding and values toward the environment, with the desired effect of the individual making a decision to change their behaviour. These actions involved:

- Waste audit;
- New waste and recycling signage;

- Whole school assembly;
- Anti-litter campaign.

Throughout these four activities, EC members shared facts about the benefits of recycling, good alternatives to environmentally damaging behaviour and simple ways a person can act for the environment. Overwhelmingly, in these activities, EC members addressed students as individuals. Common phrases included: "When you use Styrofoam …" (MS2), "You need to remember …" (ML3), and "If you don't put this in the recycle bin …" (MT). The only time EC leaders discussed the waste behaviour of the wider student body was to suggest the participating EC members "need to share what you learned today with your friends" (ML3).

6.4.1.1 Facts

Another strategy the EC used to change individual behaviour was the use of visual cues. In the case of the waste stations, large colourful posters that included a simple request, "Please sort out your waste!", were placed next to most of the bins. These signs included colour cues, red for items to go to landfill in the red bin and the blue for recyclable items to go into the blue bin. Each section had photographic images of items that should go into each bin, as seen in Figure 6.2.

Figure 6.2. Old and new signs

The new signs were intended to educate students about waste disposal at the exact moment they were disposing of rubbish. The signs were seen as a way of upskilling individual students and staff members who approached the bin station. This behavioural change strategy assumed that increasing an individual's understanding of waste disposal would increase the number of people who chose to use the bins properly.

6.4.1.2 Emotions

The whole-school assembly and anti-litter campaign focused largely on eliciting an emotional response from the students. The assembly included short videos of young people taking action for the environment, while the anti-litter campaign was over a two-week period where all school staff stopped picking up rubbish around the school campus. ML1 explained the responses the EC hoped to see from students:

The video was really inspiring about how we can actually make a difference. I hoped it would get students to see that they can make a difference and that adults aren't going to do it for us … There were some sad pictures of dead birds and of the plastic patch in the ocean. You can't really watch that without wanting to make it better …

For the anti-litter campaign, we hoped that everyone would feel shameful that their school looked so dirty.

The four activities described above were intended to change the understanding and emotional feelings toward waste disposal. It was anticipated that this would then lead a person to change their actual waste behaviour.

6.4.2   Using groupthink for the good

The behavioural change strategy that was perceived to be the most successful was also the only strategy to focus on promoting social behavioural change. The soft plastic collection campaign focused on the conditions that surrounded the behaviour of waste disposal, including the proximity of desired waste disposal receptacles, the importance of social pressure from others, and instant positive feedback for the desired behaviour. While, typically, 'groupthinking' among peer groups is associated with dysfunctional or problematic behaviour, the EC leaders saw the opportunity to employ groupthink to change their peers' behaviour in a positive, pro-environmental way.

6.4.2.1   Bringing the desired behaviour to the students

There were three factors that made the last of the EC's actions, the soft plastics collection campaign, different from the first. The first difference was to bring the desired behaviour to the students. The EC members, in groups of three and a supporting teacher, asked fellow students for their rubbish while they were eating their lunch. The EC trio had three collection bags: landfill, recycling, and soft plastic. All the rubbish the students collected was sorted and properly disposed of in front of the students.

The EC leaders believed their fellow students welcomed the opportunity to put their rubbish in the correct bin when the bins came to them. EC leader ML3 explained why taking the bins to the students worked so well:

Most of the time no-one thinks about their rubbish while they are eating. There is so much to get done during lunch ... When the bell rings [end of lunch], everyone just does whatever with their rubbish, puts it in a bin if there is one close or throws it on the ground. When we came to them to collect their rubbish they were, like, cool. Everyone was happy their rubbish was going in the right place as long as they didn't have to do anything.

EC leader ML2 agreed with ML3's statement adding:

We are all thinking about so much all the time. I think for a lot of students, when we walked up to them, it was the first time they really thought about their rubbish. It's like we don't really

read signs or listen to announcements, but we do pay attention when someone is talking directly to us.

I observed the EC members collect rubbish five times over a three-week period. The amount of rubbish placed in the general rubbish bin in the eating area was significantly less when the EC members were collecting rubbish. Also, of the students approached, 100% disposed of some, if not all, of their rubbish.

6.4.2.2   Transforming rubbish disposal into a social event

Another factor that set the soft plastic collection campaign apart from the ones that came earlier in the year was the social nature of the campaign. Not only did small groups of EC students approach other groups to engage in and discuss waste disposal behaviour, it was also done in front of the rest of the student groups eating lunch.

All EC leaders, students and supporting staff perceived it was important to the success of the soft plastic collection campaign that a small group of students and a supporting teacher approached groups of students. The EC supporting teacher MT1 shared her reasoning for requiring three EC students for each soft plastic collection group:

> *I never considered sending around one student to do the collections. One student would have been ignored, or maybe worse. But sending three girls out, that's a group that no-one would ignore ... It was important that the girls [EC] approached all the groups at lunch not just their friends, so the more girls [EC] that were walking around, the more people they knew and were comfortable to approach.*

The EC students generally agreed with the importance of sending a group of EC members to approach other groups; however, they also believed that the inclusion of the supporting teacher with the collection group was also important. EC member MS1, a junior student, recalled her first time participating in the soft plastic collection during lunch, "At first no-one wanted to talk to us and we were just rubbish collectors, especially the senior students. But when they saw Vic [MT1] behind us, they would give us a smile and act nice." EC leader ML2 reported noticing a similar trend:

> *At the beginning, no-one really cared that we were collecting soft plastic but because we had a teacher with us they did it anyway. And then eventually by the end of the term I would ask people if they had questions and they would ask things like, "Can you recycle tinfoil?" It would be like yes or no and it was really, really cool.*

6.4.2.2.1 The value of instant feedback

The final factor that distinguished the soft plastic collection from the personal behavioural change strategies was the ability for EC members to give instant positive feedback to students in front of their peers. Positive feedback was given for handing over rubbish pre-sorted, or proper disposal of rubbish directly into the bags the EC members were carrying. Also, they were encouraged by supporting

teacher MT1 to ask students questions about recycling, rubbish and other relevant environmental issues and to give strong positive affirmations when students answered correctly.

All interviewees who participated in the soft plastics collection campaign linked positive responses from students who disposed of rubbish and/or answered questions correctly, to positive feelings towards rubbish disposal from both the general students disposing of and EC members collecting rubbish. EC member MS3 recalled a time she asked a friend not associated with the EC to join them with their collection:

> *When I dragged my friend to pick up along with me she hated me, but then I actually got her talking to the people and telling them about everything [soft plastics and recycling] and she actually really enjoyed it. It was challenging them to do something that wasn't quite fun but it was in the end.*

EC leader ML3 perceived the campaign promoted not only good waste disposal practices but also elevated the view of the EC among the general student population:

> *It was different than being lectured at assembly about recycling. We were able to just talk to people and they were really surprised by how bad soft plastics were for birds and our marine life … there was no-one that was like, "I don't care about the animals".*

In addition to the group-to-group socialising that occurred during the collection, I noted that other groups of students would watch the interaction. For many students, watching the soft plastic collection EC members move from group to group appeared to be of great interest. Therefore, many groups of students passively watched the correct waste disposal behaviour several times throughout a lunch period.

Unfortunately, the soft plastics collection only ran during Term 3 for nine weeks. The collection was discontinued the following term when the school became focused on end-of-year exams.

6.4.3   A summary of the findings

This chapter has presented the findings of the third and final case study school that participated in this study. The data generated from Mundelein College led to nine key findings in relation to this study's research questions. The first research question about the EC students' perceptions of and understandings about their role within their school revealed the students' positive feelings about taking action for the environment. They also reported wanting to have a wide impact by promoting whole-school, pro-environmental behavioural change. However, the EC leaders, as well as other key staff in the school, reported the role of the EC was limited to being the voice for environmental issues and action. It was then the role of the staff to listen to consider what the EC leaders said when making decisions regarding environmental action in the school. Overall, there was no measurable waste reduction at the end of the waste initiative.

The findings for the second research question, exploring the enablers and barriers for enacting change in the school, identified four major factors:

The EC leaders and supporting staff reported the value of informal conversations between EC leaders and general EC members and between the members of supporting staff. These conversations were possible because of previously built friendships. These reported casual conversations often generated the best ideas, decisions and reflections of the waste initiative.

A barrier to long-term behavioural change campaign was the lack of time for EC leaders and members to plan, act and reflect upon behavioural change strategies. Often the general EC members were excluded from the planning stages, and neither the leaders nor general members were able to engage in critical reflection during the year. The outcome of this was a lack of understanding about successful and unsuccessful strategies.

An unanticipated barrier to student-led change in the school was the direct and indirect influence of school staff on the EC leaders. The combination of the EC leaders not being elected by the general members and the lack of transparency with the decision-making process led to the general EC members showing a growing unwillingness to take action to support the EC leaders over the year and a drop in meeting attendance.

The final major barrier to facilitating pro-environmental behavioural change the EC leaders experienced was the difficulty of engaging the whole school in the waste reduction initiative. Feelings of doubt around the possibility of success were reported at all stages of the initiative. As a consequence, the leaders reported an unwillingness to commit to any one behavioural change strategy for an extended length of time.

The third research question, exploring how the EC students attempted to enact changes to the waste practices in their school, presented two findings. The first was the EC leaders' choice to focus most of their energy promoting behavioural change in one person at a time. Information was posted at waste stations to prompt each student disposing of rubbish to do so correctly. The EC focused on increasing students' understanding about how to use the waste stations and in what way correct disposal of waste would help the environment. This strategy showed no actual reduction to landfill, and the EC did not monitor whether actual learning or an increase of value for the environment occurred.

The final waste reduction strategy that the EC attempted in the year focused on social behavioural change in the school. The EC members approached groups of students during lunch time, explaining the correct way to dispose of different types of waste, and modelling the desired waste disposal behaviour. Each group of students was encouraged to participate in the pro-environmental behaviour together. Although there was no actual waste to landfill reduction during or after this strategy, EC students reported increased knowledge and emotional desire to reduce waste from the general student body because of the activity.

The findings of this study will now be discussed in terms of relevant literature and implications for student empowerment identified.

Chapter 7: Discussion

This thesis explored the understandings, experiences and actions of students who were part of three secondary school ECs as they attempted to bring about pro-environmental behavioural change. An examination of the related literature showed that there was little agreement as to what extent students in secondary schools should be participating in the decision-making process within their school, or what structural and cultural changes must happen in a school to support students authentically engaging in the process. Furthermore, there appeared to be no data to suggest the New Zealand secondary schools were succeeding or failing at promoting student empowerment in co-curricular activities. In addition, there were only a small number of studies that analysed the usefulness of behavioural change theories for youth attempting to lead pro-environmental change initiatives in secondary schools.

In light of these gaps in the research, the following research questions were investigated:

1. What are environmental council students' perceptions and understandings about their role as change-makers within their school?
2. What are major enablers and barriers to empowering students to enact a change initiative within their school?
3. How do environmental council student members enact change to waste reduction practices within their school?

The findings of this study suggest that these students, while they initially believed that they had the means and the power to bring about change in their school, experienced several barriers that prevented them from bringing about any measurable behavioural change in their school. In Section 7.1, the events that impacted on how hopeful the students were that they could bring about change will be discussed. This is critical as when students reported a decrease in hope, they also exhibited signs of disengagement with the initiative. Section 7.2 will discuss the social and structural limitations the schools placed on the students, thus preventing them from engaging fully in the decision-making process. Finally, Section 7.3 will discuss the usefulness of two prominent behavioural change theory models for theorising about youth planning, actioning and reflecting upon their attempts to bring about behavioural change in a school.

7.1 Agency: Anything but stable

The first research question was: How do EC students perceive their role as change-makers within their school? This question was critical as there were no previous studies apparent that explored New Zealand secondary students' perceptions of their role as change-makers in their school, or how students' drive to effect change increased or decreased during an environmental initiative.

An important finding of this research was that the EC members and leaders joined the council because they believed as a group they could bring about pro-environmental changes in their school;

however, critical events throughout the year impacted on their level of confidence and hope that they could bring about change. Snyder's (1995) definition of hope, a combination of agency and believing there is a pathway for success, was used to analyse why the students reported different levels of hope during the initiative. The findings of this study show that students in each EC experienced key events that impacted on their perception of agency and their confidence in their action plan. These critical events will now be discussed in terms of students' agency.

7.1.1 Declining agency

At the beginning of the initiative, most students did not have a predefined idea of what they wanted to accomplish as members of the council but felt confident that they could successfully bring about some type of positive change. The students justified their high levels of agency, or their ability to be part of a successful, school-wide change initiative (Bahou, 2011), using previous personal successes or successes they had seen other youth experience on social media. At this stage of the initiative, the students had not experienced any obstacles. Their feelings of agency were almost completely based on their belief in themselves.

However, as the year progressed, the EC students' confidence in their ability to bring about change varied dramatically. This could partly be explained by White's (1989) research, where he observed how restrictions adults placed on youth participating in society affected their ability to take self-determined actions. He explained that young people are "subjected to wider relations of social division and social control, and agency is really about how young people negotiate, contest, and challenge the institutionalized processes of social division within which they are situated" (White, 1989, p. 17). In the context of this research, the youth spent much of their time attempting to bring about behavioural change by trying to figure out how to work within the constraints the adults had put on them, of which they were not aware at the beginning.

A very concerning finding in this study's data was that while the students in this study did not initially realise the limitations of their agency, the supporting adults did. The adults who supported the students in the ECs anticipated from the outset of the initiatives that students would not have a place at the decision-making table, and thus anticipated the EC students would have difficulty influencing the schools' administrators' decisions about any kind of student-led change.

Despite seeing the barriers, the adults did not want to diminish the students' initial hope. Some key staff, as in the case of Vic the supporting teacher at Mundelein College, and the property manager at Grayslake College, chose to act as ambassadors for the students, using their access to power in the school to promote their EC's agenda. The other supporting adults allowed the students to proceed without clarifying their understanding of the barriers or providing any assistance, citing the importance of problem-solving, failure and resilience in building students' leadership skills.

These findings suggest that it did not matter what actions these supporting adults took; the EC leaders became aware that they were not able to participate in the decision-making process on their own. As a consequence, the EC students reported diminishing feelings of agency as they realised their lack of

participation in the decision-making process, a critical event on their pathway to bring about change. These findings relate to Snyder's (1995) theory that, in order for hope to maintained over long periods of time, a person must perceive there are workable pathways to success, as well as believe that they have the ability to achieve success. As the year progressed, the EC students reported falling perceptions of hope or being able to take positive action for the environment and, consequently, the students exhibited a decreased level of determination to reach their goal.

7.1.2 Increasing agency: A short-term solution

While the overall trend in the three case study sites shows evidence of EC students' falling levels of hope as they realised that their agency was limited, the findings also suggest that this trend could be temporarily reversed when the students were able to take small actions that showed real signs that the students had made a positive impact on the environment. This finding suggests the single greatest boost to the students' perception of agency was after they had participated in a pro-environmental action. Previous research supports this finding, highlighting that people who work with others for a common purpose show greater feelings of success and hope than those who take action alone (Pittman & Irby, 1998; Roth, 2000).

Interestingly, the action taken did not have to be connected to the main focus of the year, which in the case of the three ECs was reducing the amount of waste their schools were sending to landfill. This can be seen in the case of Mundelein College; the EC students spent several afternoons painting a mural on the outside of the school's garden shed. The EC leaders reported some frustration that the activity would have no actual impact on promoting pro-environmental behavioural change in their school but did note that the members of the council appeared recharged after their efforts. Roth (2000) highlights how group action can increase a group's cohesiveness and promote feelings of community between the participating members. Roth's explanation could support why a group who showed evidence of disconnection as a group would then report feeling an increase in agency after group activities such as the waste audits, or Waste Sort for Sweets at Wauconda High School. After each action, the students reported a renewed feeling of hope, feeling that they had the ability to overcome barriers to make things happen. This also supports McQuillan's (2005) argument that students can and need to learn to support and empower their peers. The activities that the ECs engaged in not only brought them closer together as a group, but both EC leaders and general student members reported higher levels of agency and empowerment from their work together.

Findings show that students' perceptions of agency fell during periods of no action. In the case of this study, the year was broken into four school terms, each averaging nine weeks. Observational notes from EC meetings throughout the year clearly show a rise in attendance and engagement in weekly EC meetings after EC-organised events (see Figures 4.3, 5.1, and 6.1)

A comparison of Mundelein and Grayslake Colleges shows further evidence of the importance of regular action opportunities for students. Mundelein College had the most stable attendance of EC meetings, but also had at least one activity a term for students to participate in. Grayslake College, however, only had two events, one at the beginning of the year and one at the end, after their waste

reduction initiative had already been rejected. The numbers of students that attended these activities were almost triple the attendance of meetings during Terms 2 and 3 during the year (see Figure 5.1).

These students appeared to base their perceptions of agency not on how capable they personally believed they were at bringing about their specific pro-environmental goal, but on how recently they had taken tangible action for the environment. This suggests that it is critical to support regular action-taking opportunities for youth embarking on long-term projects.

7.1.3 Pathways: Increasing agency long-term

Snyder's (1995) second element of hope is having a 'pathway to success'. The theory that a pathway, or having a plausible route for success, is needed has been a cornerstone of hope theory for decades. Researchers such as Ingram, Warlick, Ternes, and Krieshok (2017), have argued that the human brain's normal reasoning includes thinking about how to get from Point A to Point B. An even stronger characteristic of a hopeful person is having backup pathways to success (C. Snyder, LaPointe, Jeffrey Crowson, & Early, 1998).

All three ECs in this study had a pathway, or action plan as it is referred to in the findings. Both staff and students believed that having an outlined action plan was critical to achieving their waste reduction goals. However, each action plan was treated as sensitive information, and was not available to everyone involved in the initiative.

At both Mundelein College and Wauconda High School, the supporting teachers created and held the action plans. The pathway was considered important for the school administration to be aware of, justifying the existence of the EC. The supporting teachers used the action plan to guide their actions during the year. Grayslake College, while different in that it was the EC student leaders who created and held the action plan, also benefited from having a time-line of actions for the year.

By having the supporting teachers and, in Grayslake's case, student leaders hold the action plan, they also held power over the rest of the students on the council. This power included the need for them to be present at meetings to give them a purpose. When meetings were run without the teachers, and leaders, the attending students had no topic, or next step to work towards without the guidance of a plan. The holders of the plans were also the only ones who had enough information to approach staff for support, therefore isolating the general EC students completely from the decision-making process.

A consequence of withholding the action plans was clearly identified in the findings of each case study site. Students who were unaware of the plan reported feeling disconnected from the initiative and reported concern that the initiative would not be successful. They could not describe their role in the initiatives and were unable to explain what actions their EC leaders and supporting teachers had been taking. Without knowing the set pathway to success, the students quickly lost hope that they would be able to bring about any type of change to their school.

The first research question in this study focused on how EC students perceived and understood their role as change-makers within their school. The findings indicated that while the students believed they

were meant to bring about positive environmental change as members of their school community, their determination to bring about change varied dramatically throughout the year-long initiative. Two major factors that contributed to the students' drive to bring about change in their school were their perception of agency and their ability to see a pathway to success. Both of these factors could be influenced in a positive or negative way by the type of interactions the students had with each other and the supporting staff.

7.2 Student empowerment: The failure of good intentions

The second research question was: What are major enablers and barriers to empowering students to enact a change initiative within their school? This question required EC students, leaders and supporting staff to define each other's anticipated roles in the school change initiative and compare these descriptions to the actual roles each group filled during the year. The findings suggest that the students' feelings of empowerment were directly linked to their role within the change initiative. The students indicated feeling more empowered when they were able to take authentic leadership roles within the EC and the behavioural change initiative and were involved in the school's decision-making process.

A major finding of this research was the drastically different perceptions of how different groups in each of the three case study schools defined student empowerment. The students described an initiative that was designed and actioned by them, while the supporting teachers reported differing degrees of guidance and management of the students and their initiative. The greatest contrast was found in the schools' administrators' perceptions that they were acting as the sole decision-makers of actions taken by students in the school. Over the course of the year, the findings showed how these vastly different definitions of what it meant to be empowered students in a 'student-led' initiative negatively affected how the different groups worked together.

7.2.1 The difference between the rhetoric and reality of empowering students

The students in all three schools described a student-led initiative that allowed them to choose the pro-environmental goals that they felt were most important, research them, design an action, and then follow through with their plans. They each argued that empowerment was not an all or nothing concept but was a sliding scale. The more they were able to take the lead during each stage of the initiative and the adults acted in supporting roles, the greater their feelings of being empowered. Each of the schools' EC leaders perceived some expected level of student leadership to be allowed by the staff. In particular, the leaders anticipated being able to run the EC meetings, choose actions to take during the year, and be able to propose changes to school procedure and policy that would support their behavioural change initiative.

From the beginning of the school year, there was evidence that school staff and administrators intended to retain some control over the leadership of the ECs. The first instance of this was during the selection of the EC leaders. Two out of the three ECs had their EC leaders chosen exclusively by school staff. Similar to Andersen's (2011) findings, in each of the two ECs that had their leaders

appointed for them, they reported concerns about how much power their leaders actually had, or whether they were just puppets for the staff. In contrast, Wauconda High School's EC chose their leaders without any adult input. While this EC was no more successful than the other two schools, there was no indication that the general EC members in any way blamed their leaders. These findings support what several student empowerment researchers (see Appendix A for a definition) have noted, that adult influence or interference in selecting youth leaders can negatively impact on their ability to lead their peers (Andersen, 2011; Robinson & Taylor, 2013; Sears et al., 2014).

Another issue that arose in the findings was the lack of agreement about the role of student leaders. As described by a supporting teacher at Wauconda High School, administrators and staff exhibited widely different expectations of the EC leaders. While a few adults shared some similar expectations as the students, such as running the EC meetings, most of the adults appeared to follow a traditional student-teacher learning model where teachers set clear parameters and goals for the students, and students are given freedom only in how they achieve the set goals. Seminal researchers such as Dewey (1916) suggest that historically, schools were modelled on the larger society they reside within, therefore it is not unexpected that some staff presumed a similar teacher-directed model should govern the EC. While several theories of student empowerment were examined in Chapter 2, the EC leaders' and students' definitions of what 'student-led' meant to them included characteristics more in line with active participation models, such as the upper steps of Arnstein's (1969) L*adder of Citizen Participation* shown in Figure 2.3, and Fielding's (2011) *Levels of student (pupil) involvement in school self review and school improvement* as shown in Table 2.2. The findings of this study suggest that there are still remnants of the teacher-directed traditional model in the beliefs of teachers and administrators who participated in this study and that these remnants can limit the success of student-led action. For example, there was an unwritten expectation at Mundelein College that the EC leaders do not speak directly to the school's administrators but use the teacher supporting the EC to pass on their ideas and requests.

All the teacher participants in the three case study sites agreed that school staff and administration would make any final decisions about any actions the students wanted to take, supporting Robinson and Taylor's (2013) findings about the persistence of top-down, or teacher-centred, power structures within schools today. The administrators all described students' empowerment as students learning to take action, inferring that a positive or negative outcome to any student-led initiative was not critical, only that leadership skills have been learned. Students were expected to present their opinions and request permission, but the students had no role in the actual decision-making process. However, once a decision was made, the students were again solely responsible for the outcome. The administrator's definition of student participation follows that of the democratic theory of student empowerment, where students are encouraged to voice their opinions only when an adult asks for their input, and all final decisions are the responsibility of the teachers or administrators in the school (Dworkin et al., 2003). These findings show that the different definitions of success and the limited roles of staff and administrators meant the adults had limited emotional connection with the success of the initiative. This contrasted greatly with many of the students, who believed they were personally responsible for the failure of the initiative.

This finding supports previous research suggesting that there is a gap between 'espoused beliefs' - in terms of wanting to support student-led action - and the 'actions' - the actual response of teachers and staff (Brasof, 2015; Fielding, 2011; Howley & Tannehill, 2014). These studies, and the findings of this study, suggests true power-sharing and allowing students an equal say in decision-making takes more than seemingly willing participants, but also education, changes in the decision-making process, division of power, beliefs and practice.

Differences in the definition of actual student empowerment are well-documented. The late 20th century saw a rise in discussion about the role students play in school and their wider communities. Researchers suggested that historical roles of a student were undermining attempts to include youth in the decision-making processes in their school (Cook-Sather, 2006; Fielding, 2011; Rudduck & Flutter, 2000). In addition, the 1990 UN Convention on the Rights of the Child dictates that children have a right to voice their opinion as well as participating in decision-making (1998).

However, it was not until 2014 that New Zealand published *Youth engagement in local government*, a two-page document outlining how local government should engage with youth councils (Ministry of Youth Development). While the document gives multiple examples of what forums are appropriate to engage youth in discussion, it fails to define what "consulting with youth" and enabling youth to be "part of the decision-making process" mean (p. 9). Even though this document recommends adults take a considered approach to working with students and highlights the importance of using youth-appropriate language, activities and physical settings, the findings of this study suggest that there is still a gap between schools' rhetoric of supporting student empowerment and actually allowing students to participate in decision-making.

7.2.2 Three missing conditions for student empowerment

Each of the three case study sites highlight the good intentions school administrators and staff had for supporting student-led action. However, it is also clear that each school lacked the conditions for authentic student involvement and empowerment at critical points throughout the year's initiative. Fielding (2001) examined the lingering effects of 20th century democratic style of engaging students, that of 'listen, learn and vote when asked', and suggests schools need to re-imagine their structure and ways of relating to students before they can offer a culture that supports genuine student empowerment. Of Fielding's eight considerations to enable schools to move beyond tokenistic student voice, that is based on the historical 'speak when spoken to' culture of the child, three proved useful in analysing the findings:

1. Speaking
2. Organisational culture
3. Action

The findings of these case studies resonate strongly with three of Fielding's conditions: speaking, organisational culture and actions. Each of the three conditions affected, either as an enabler or

barrier, how empowered the students perceived themselves to be throughout the change initiative, and the success of the student-led behavioural change initiative.

Table 7.1. Evaluating the conditions for student voice

Speaking	• To whom are they allowed to speak?
	• What are they allowed to speak about?
	• What language is encouraged/allowed?
	• Who decides the answer to these questions?
	• How are those decisions made?
	• How, when, where, to whom and how often are those decisions communicated?
Organisational culture	• Do the cultural norms and values of the school proclaim the centrality of student voice within the context of education as a shared responsibility and shared achievement?
	• Do the practices, traditions and routine daily encounters demonstrate values supportive of student voice?
Actions	• What action is taken?
	• Who feels responsible?
	• What happens if aspirations and good intentions are not realised?

Note: Adapted from (Fielding, 2001)

The three conditions and how they enabled or prevented student empowerment (summarised in Table 7.1) will now be discussed.

7.2.2.1   The conditions for student voice

The findings from all three case studies supported Feilding's argument that conditions for communication between students and adults have a major effect on the students' perceptions of empowerment. While each school had one or more supporting teachers who were expected to engage directly with students, most other staff reported not wanting to speak directly to them. Instead, the supporting staff member was expected to pass along important information. One exception to this expectation was the meeting the EC leaders had with the principal at Grayslake College. However, the students were required to organise the meetings with the principal's secretary, and were not allowed to speak with the principal outside these allotted meeting times. This suggests that those staff not required to directly engage with students did not value what the students were saying, instead wanting another adult to vet the information, and then only passing on *important* information. In addition, the key teachers from all three schools showed evidence of choosing EC leaders who exhibited certain characteristics, such as good grades and participation in many co-curricular clubs in the school. Brinkhurst et al. (2011) point out this type of selection criteria primarily promotes 'high-flier' students, thus promoting the idea that only some students should be communicating with supporting staff.

The vetting of student voice had several consequences for both the students' perceived level of empowerment and what they were actually able to accomplish during the initiative. Most students

reported distrust of the motives for change of the people who were making the decisions about the ECs' actions. In two of the three case studies, students and teachers exhibited an *us against them* culture, suggesting the students were fighting the system as well as attempting to bring about whole-school behavioural change. The third case study, Wauconda High School, had a similar situation with limited value placed on student participation; however, the students blamed themselves for their failure to act.

There were some examples of staff, such as the property manager at Grayslake College, who chose to directly approach students. In this case, the students reported feeling supported, both emotionally and practically, by the adult. The students were able to identify that the property manager valued their voice and their ability to effect change. These students were also able to engage in meaningful discussion about the initiative, and most importantly, identify possible barriers and agree on viable solutions. Unfortunately, the property manager was not the person who made the final decisions about the value of what the students were voicing, so despite the productive relationship the students had with the property manager, the students still lost the battle.

Similar issues of which students were given opportunities to speak could be seen at the student level, between student leaders and general EC members. An extreme case of this was at Mundelein College, where the EC leaders made all the decisions at weekly EC leader-only meetings, completely eliminating any impression of including or valuing the voice of the general members. As a consequence, because of the general EC students' perceptions of their voice not being valued by the leaders, there was an increase in distrust of the abilities and motivations of the student leaders illustrated by declining attendance at meetings. This suggests that the structure of the student-led council, a micro version of the wider school's power structure, promoted the same lack of value of student voice, and culture of *us against them*.

7.2.2.2 *The conditions for an empowering organisational culture*

The second condition in Fielding's (2001) model, organisational culture, was also evident in this study's findings. This study's findings suggest organisational culture greatly affected the students' perceptions of empowerment. According to Stevenson (2007), organisational culture includes: how the school day is structured, policies and rules, as well as expectations of what good behaviour and control look like. His research highlights the potential conflict between running a well-controlled school and running a school that has "considerable tolerance for ambiguity and uncertainty, autonomy for making judgements, and the confidence and insight to challenge conventional wisdom" (p. 148). The pro-environmental behavioural change initiatives that the EC students were attempting to bring about challenged the way the school discussed, valued, and disposed of waste. The students could not bring about meaningful change without first changing the expected norm of waste behaviour and systems within their schools. As Fine and Weis (1999) noted, when students attempt to challenge the status quo, their actions can be seen as acts of defiance unless the school's organisational culture allows for constructive criticism from students.

The findings of this study show a similar disconnect between stated empowerment goals for the students, and an organisational structure of schools that first and foremost value discipline and order.

As can be seen in the description of each case study's strategic documents, each school reported working towards a vision of shared values with their students. However, it is interesting to note that none of the three schools consulted students when creating the strategic documents, the school vision or stated values.

There were considerable differences in what attributes were valued by these schools and, in the case of Mundelein College, what attributes were actively promoted in the school. All schools expressed the main goal of their school was to promote academic achievement in relation to set national standards. This suggests that, above all else, students were expected to learn from the staff and use their knowledge to achieve set tasks, either in the form of internal examinations set by teachers, or external ones set by the New Zealand Qualification Framework (NZQA). Taking action for the environment, while included as an approved topic by NZQA since 2008, was not being taught at any of the three schools, meaning that all EC business fell outside each school's academic focus. This finding supports Hart's (2010) findings, that while society as a whole regards environmental education as important, teachers and schools have yet to fully integrate environmental education as part of their role as educators.

In addition, the requirement of all three schools that EC meetings and actions take place outside of class time reinforced the notion that student-led change, at least around environmental action, was not a priority for the school. Again, this requirement highlighted the distance between rhetoric and actions around the pro-environmental change espoused and enacted by EC students and the school staff who controlled the scope of the valued curriculum, and in the case of the three schools that participated in this research, it was the principal who had this ultimate control.

7.2.2.3 The conditions of action

The final conditions were of action. According to Fielding (2001), the conditions of action include not only whether the students were able to take their desired action, but who becomes responsible for the action's success or failure. In an initiative where the adults and students have a shared role in enacting change, there should also be a shared experience of success or failure.

Of the three conditions Fielding identified, the condition of action was most uniformly apparent in the findings of all three case study schools. All of the adults and students perceived 'student-led' as meaning that the success or failure of the initiative was the sole responsibility of the students. Unfortunately, while the students had minimal control over what actions they were allowed to engage in, they carried full responsibility for the overall failure of the change initiative.

Those with the decision-making power, in all three schools, were also the ones who put the least effort into the success of the projects and therefore reported the least distress when it became evident that the behaviour change initiative was going to fail. At the end of the initiative, the EC leaders of all three initiatives were left on their own to deal with their feelings of failure.

These student leaders reported extensive disappointment when the initiative failed. All the students referred to their own perceived shortcomings or failures to explain why they were unable to bring

about change in their school. Only a few students mentioned that it was the staff who decided against allowing any significant student action within the school, but even these students qualified their feelings with an expectation that, if they had just tried harder or had better ideas, they could have convinced the key staff member to allow their action to proceed.

Research Question 2 asked what were the major enablers and barriers to empowering students to enact a change initiative within their school. This question highlighted the actual barriers and enablers that affected student agency and how interactions with school staff affected their ability to lead successful, student-led change initiatives, and thus students' sense of empowerment. The findings suggest that the students' feelings of empowerment were directly linked to their role within the change initiative, the more authentic the leadership roles were and the greater the students participation in the decision making process, the more empowered the students felt. Also, the findings highlighted how vastly different definitions of what it meant to be empowered students in a 'student-led' initiative negatively affected how the different groups worked together.

7.3 The benefits and limitations of two theories of behaviour

The third research question was: How do EC students enact change to waste reduction practices within their school? This question was bigger than a snapshot of what pro-environmental change strategies the EC students engaged their peers in, as there was no change in behaviour at the end of the initiatives. However, the two models, TPB and SPT, helped to explain what went wrong by exploring the beliefs the EC students had about the conditions of behaviour model, how their personal theories of change impacted on the strategies that they chose and identifying what potential current behavioural change theories have to analyse their initiatives.

Researchers cannot know what they will find at the end of a study. At the beginning of this research process, I could not have known what findings would become evident. This uncertainty meant that choosing a single behaviour model at the beginning of the research could have limited the data generation and analysis. Instead, only after generating the data from focus group and individual semi-structured interviews, as well as considering detailed observational notes of EC behavioural change actions, could it be seen how different models allowed for the best analysis of the data. What follows is a discussion about the usefulness of two popular behaviour theories: The TPB and SPT. While neither of the theories alone allowed for a comprehensive analysis of this study's data, the SPT model, with the addition of elements, provided a more comprehensive fit for the theorising of participants' behavioural change strategies.

7.3.1 A rejection of a linear model of behaviour theory

The findings of this study suggest that the students unconsciously rejected a linear model of behavioural intent, such as the popular TPB model. As discussed in Chapter 2, the TPB relies primarily on personal attitudes and perceptions of agency as determinants for future pro-environmental behaviours (Ajzen, 1991). In addition, studies have suggested that the TPB is useful for predicting only short-term behavioural intent, and therefore, potential behavioural change (Hardeman

et al., 2002; Hargreaves, 2011), whereas the participants of this study placed more value on sustained action for the environment rather than personal intentions to act and short-term behaviour change. Thus, using this linear model of behavioural intent would not have given readers a meaningful measure of success or failure.

The TPB has historically used "shortitudinal" designed studies that rely on self-reporting to determine if an individual would act in a pro-environmental manner (Sniehotta et al., 2014, p. 1). Because of the nature of self-reporting surveys requiring little, if any, individualisation, researchers are able to generate large amounts of quantitative data from which to extract possible behavioural change strategies (Godin & Kok, 1996). However, this theory's reliance on predictions of behaviour can appear unconvincing when used as an argument for making large-scale changes, such as changes to waste management behaviour that these ECs were attempting to bring about in this study.

When evaluating behavioural change, students put minimal value on how their peers intended to act in the future, believing that intention does not correlate with behaviour; thus, unbeknownst to the students, discounting the TPB behavioural intent model. Instead, the success of the initiative was based on a numerical calculation, the amount of daily waste sent to landfill at the beginning of the initiative minus the amount at the end. For example, the EC leaders at Wauconda High School were asking their principal to spend a considerable amount of money to create waste stations around the school. The EC students did not believe the principal would be willing to commit funds based on students' voice of intent to recycle.

In addition, the TPB model puts no value on measuring actual change, and thus does not act as a valid tool for evaluating success for the participants in this study (Hargreaves, 2011; Sniehotta et al., 2014; Stern, 2000). Each of the three ECs had a goal of reducing the amount of waste the school was sending to landfill.

A second issue with a linear model of behavioural intent is its assumption that personal perceptions of agency and intention do not fluctuate over time. The findings in this study contradict this assumption, providing evidence that there were at least two elements that changed the students' sense of agency throughout the year: 1) perceived support of adults, and 2) the amount of time since students engaged in behavioural change activities. Had the EC students wanted a snapshot of the immediate effects of a behavioural change strategy on the perceived agency of their peers, the TPB would have been a more useful model.

These students attempted a long-term behavioural change initiative that engaged their peers in multiple behavioural change strategies over an extended period of time. This desire to slowly break down old habits and create new, more environmentally responsible ones align better with SPT, as it seeks to highlight how multiple elements interact with each other and the practice-as-performance that it is in (Shove & Spurling, 2013).The way in which the SPT can be used to theorise change behaviour is now discussed.

7.3.2 SPT: A model that values the physical and social realities of the lived environment

In contrast to the TPB, SPT, as described in detail in Section 2.4, suggests that a behaviour or practice is created, changed, and sometimes driven to extinction by the changing dynamics of the social and physical elements in the environment (Shove et al., 2012). The ecosystem of a practice is broken into three categories: skills, image, and stuff/materials. This model highlights how bringing about a seemingly simple practice, such as putting an aluminium can in a recycling bin, may require different strategies to bring about the same practice depending on the physical and social culture of the environment. The SPT model variables can help to explain the findings of this study. In particular, the importance of *stuff*, one of three key elements of SPT, was also considered to be a critical element in all three case studies' EC behavioural change initiatives. Figure 7.1 demonstrates how the SPT model can be used to illustrate the EC students' behavioural change strategy.
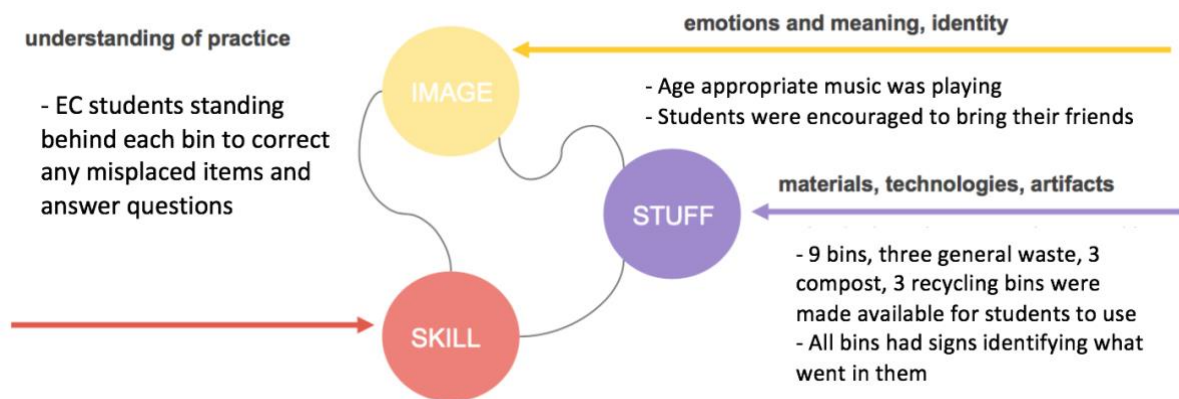
Adapted from Scott et al. (2012)

Figure 7.1. Wauconda High School's Waste Sort for Sweets elements in the SPT model

For example, as described in Section 4.4.2, the Wauconda High School EC organised a Waste Sort for Sweets activity where the EC students attempted to upskill their peers on what went into recycling, composting and general rubbish bins, while providing the bins that allowed students to engage in the actual pro-environmental behaviour and creating a fun, social atmosphere that made their peers want to be at the event at the same time.

Even without any previous understanding of SPT, the Wauconda High School EC students believed it was critical to the success of their behavioural change event that they had a learning component (skill), a type of positive motivation to encourage participation (image) and materials to make the behaviour of waste diversion as simple as possible (stuff).

Figure 7.1 illustrates how SPT not only provides a model for how the elements were affecting the practice-as-performance, or the life-cycle of the practice, but also allowed analysis of why, after the event, when the bins were taken away, did the single element of knowing how to recycle fail to produce any lasting behavioural change. The SPT was also a critical part of understanding why, during the event, the EC students predicted the event was going to bring about lasting behavioural change. As the findings describe, the students who participated in the Waste Sort for Sweets event

learned which bin to put their recyclable and compostable materials (skill). However, once the event was over and the recycling and composting bins were removed (stuff), they reverted back to disposing of all of their rubbish in a waste bin.

As was found in this study, all of the students in the three case study schools believed that having the right *stuff* was critical to the success of their pro-environmental behavioural change initiative. Each of the three ECs wanted to make different changes to their *stuff*, ranging from setting up waste stations around the school, to creating appropriate signage for bins. However, while each of the councils focused on bringing about different changes, they all believed that, without a physical change to their environment, they would be unable to change behaviour.

Interestingly, not all of the adults shared the students' belief that *stuff* was a critical element for behavioural change. Other key elements, similar to those prevalent in the TPB, such as knowledge, perception of agency, and finding value in an action, were suggested by some adults to be a more effective way to teach behavioural change. For example, the principal at Grayslake College believed the EC could bring about meaningful behavioural change through knowledge alone, and therefore did not believe that his decision not to allow recyclable collection bins on campus inhibited the success of the EC's waste reduction initiative.

Another finding of this study was the importance the ECs put on approaching behavioural change as a social rather than an individual task. Again, unlike a linear model of behavioural change, which focuses on how intrapersonal perceptions and understandings lead to an individual's behaviour, SPT suggests that a practice, when taking place in a social, dynamic context, needs to be addressed not as an individual issue but a practice unique to the social and physical context (Halkier et al., 2011), for example the Soft Plastic Collection drive conducted by the EC students at Mundelein College. The students intentionally approached students when they were sitting with their friends socialising, believing that students were more likely to change their behaviour if they saw their friends changing as well.

Furthermore, the EC's belief that their peers would only engage in pro-environmental behaviour if it was fun or, in the words of one EC member, "cool" (GL3), aligned with the social component of SPT. Social practice theorists see value in a shared behavioural change experience. Shove (2003) highlighted the power of positive reinforcement from peers when a behaviour is conducted in front of others, making a single practice into a practice-as-performance. This acknowledges the power of the audience, and in this study, friends and classmates. Most of the behavioural change strategies that the students in this study considered successful were social activities that allowed for immediate, positive, verbal reinforcement by peers like the Waste for Sweets Sort. It was also the behavioural change strategies that focused on social behaviour that were perceived as the most successful by the EC leaders.

SPT also removes the burden of mitigating current environmental issues from individuals. As several recent studies involving youth have concluded, youth can be overwhelmed with the hopelessness of solving huge environmental issues (Ojala, 2012). Ojala notes that youth often express disbelief that

their personal action, no matter how pro-environmental, can overcome the negative impact of the majority of people who are passively or actively acting against the environment. The findings in this study provide evidence that behavioural change strategies that promoted shared social responsibility and allowed youth to see others engaging in pro-environmental behaviour yielded a greater level of engagement from students than strategies that attempted to engage with individuals about their personal feelings and actions.

A final consideration as to why SPT was, on the whole, a more fruitful model to analyse the success of behavioural change in this study, was the theory's ability to analyse both quantitative and qualitative data (Halkier et al., 2011). SPT gave me greater flexibility when generating and analysing data such as focus group interviews, observational notes and waste audit data. Therefore, I was able to analyse perceptions and actions of the participants in more depth, leading to a greater level of nuanced analysis than would be possible with a TPB-modelled study, focused solely on personal survey responses.

The SPT model also infers that behavioural change is a fickle process, with uncertain outcomes. SPT's fluidity, versus a linear model's static structure, allows for an infinite number of different behavioural change strategies and outcomes to be researched. This fluidity allowed the data analysis stage to be approached without set expectations of what I would find. Hargreaves (2008) similarly found that SPT allowed him to view his case study around pro-environmental change in a workplace as being a complicated web of intertwining motivations, considerations, and expectations. As a reader of this thesis can see, many of the findings of this study were unexpected and would have been left unexplored without the rich detail that use of the SPT enabled (Hargreaves, 2011).

7.3.3 Potential modifications of social practice theory

While the SPT model was useful for theorising about the findings in this study, there were two critical elements encountered in the findings that were not present: the importance of negotiating behavioural change within the organisation's power structure; and the need for regular evaluations of behavioural change strategy outcomes. Without including these two elements in this thesis, much of the understanding as to why the behavioural change initiatives succeeded or failed would have remained invisible.

Like many social organisations including workplaces, sports teams, churches and, in this study, educational facilities, an organisation has a formal social order that plays an important role when large-scale changes are proposed within the organisation (Reckwitz, 2002). As can be seen in the findings of this study, much of the time spent working towards behavioural change was spent negotiating with people in other levels of the social order.

Using the SPT model, each behavioural change strategy that the ECs used could easily be categorised into the three elements. However, the theory does not take into consideration that not all groups of people within an organisation will react to changes to image, skills, and materials in the same manner. For example, the EC students at Wauconda High School anticipated some of their

peers would rebel against any suggested behavioural change, even when most of their peers are accepting of the new or modified practice. This supports previous research by Wegner (1998) and Hargreaves (2011) that suggests the presence of multiple communities of practice interacting within a behavioural change setting needs further research.

A second element that was found to be critical to the analysis of this study was the failure of the participants to regularly evaluate the success of changing any one or more of the elements. The SPT model infers that a practice is continuously being pushed and pulled in different directions by changes to any of the three elements (Shove & Spurling, 2013; Warde, 2005). The model implies that this process is fluid, without a beginning, middle or end. The SPT model gives no suggestions as to how to evaluate any change to the practice as a result of changes to one or more of the three elements, at a specific point in time. However, neither the participants of this study nor the researcher had the luxury of engaging in a never-ending behavioural change initiative. Each stakeholder in this study needed to arbitrarily designate a beginning and end within which to evaluate the outcomes of the change strategies. The need to incorporate regular strategy evaluations of success and failure would greatly benefit any person attempting to use the SPT to plan a behavioural change initiative. Future researchers may consider analysing the usefulness of partnering SPT with a second behavioural change model that incorporates the same three elements but allows for regular checks of progress, similar to those afforded by the TPB.

7.4 Significance of this research to empowering youth as pro-environmental change agents

This research project makes three original contributions to research in the area of student agency and social behavioural change theory:

- Knowledge about sustaining youth agency;
- Identifying definitions, policies and traditional cultural norms that negatively impact on authentic student empowerment;
- Highlighting the strengths and weaknesses of using two of the popular behavioural change theories at creating measurable change.

Each contribution will now be discussed.

7.4.1 Building resilience: Implications for youth agency

The findings of this research project have implications for understanding why perceptions of student agency fluctuate over time. This research has shown that significant shifts in a youth's perception of agency can be seen after participating in small, tangible actions related to their larger goal. In contrast, there was little if any increase in perceptions of agency after activities such as planning, discussing, and reflecting. Therefore, the results of this study suggest students engaged in long-term projects should be supported in taking regular action throughout initiatives.

While understanding that students' perception of agency is not stable, which is an important contribution of this study, further research is required to construct a more complete and meaningful theory of building and supporting student agency. I would suggest further research into the type and frequency of action required to positively impact on students' sense of agency. Such research would need to look critically at many of the popular action learning models that are used in schools today. Many of them, like the Enviroschools Action Learning Cycle, dictate that action-taking happen only once during a project's duration (Wilson-Hill, 2010). The findings from this study run counter to this notion and indicate that having multiple opportunities to take action might increase students' engagement with a project.

A second implication for supporting long-term youth agency is that a student's inability to see a pathway to success has negative impacts on their perceptions of agency. This research highlights the negative consequences of adults withholding relevant information from students. In the case of the three schools participating in this study, each had one or more adults who admitted the students did not have all the information they needed to accurately evaluate the situation and make a sensible action plan. As a consequence, all the student leaders experienced multiple occasions throughout their initiative where they did not have a pathway to success. It is not reasonable to suggest that students who are capable of leading change, are not capable of understanding the processes involved in attempting to make that change.

7.4.2 Addressing foundational issues: Implications for student empowerment

The findings for this research have implications for both youth leaders and adults tasked with supporting youth empowerment. This research has shown how historic expectations and limitations of students within schools can impede today's students' attempts to fulfil their role as active and empowered citizens.

One implication for supporting youth empowerment is for students and supporting adults to work together to develop a definition of what 'empowerment' means in their specific setting, whether it be a school, sports team or other organisation. Ideally, this development will include goals, roles, limitations and potential needs for support for all the key stakeholders. It is also important to note that youth empowerment is specific to the context, goal and participants, therefore the definition of empowerment will change over time and will require regular re-evaluation. Models such as Fielding's 'Levels of student involvement', presented in Figure 2.3, could provide a starting point for conversations between students and staff. This project's findings suggest that a consequence of not having an agreed upon idea of what an 'empowered student' is and does, negatively affects student-adult relationships and creates barriers for the student attempting to fulfil their leadership potential.

A second implication of this study is the need for school staff and administrators to evaluate the conditions of student engagement in the school. Declaring that an educational facility values and supports empowered students does not automatically lead to empowered students. Traditional concepts of student voice and student participation, which do require authentic student involvement in decision-making, or address the structurally and culturally enforced power hierarchy between students

and staff, are still in effect to some degree in schools. Only by identifying the conditions of teacher-centred learning and the conditions of authentic student participation can a school begin to feel confident that students and adults alike are able and willing to work together as empowered people (Fielding, 2011).

7.4.3   Identifying how behaviour theories can support behavioural change action

The last major implication of the findings was the suitability of using two popular behaviour theories, the TPB and SPT, as the theoretical models to analyse a student-led behavioural change initiative. Each theory has been used in many pro-environmental behavioural studies in recent years in order to answer a seemingly simple, but inexplicable question: *How can someone change another's behaviour?* (Godin & Kok, 1996; Hargreaves, 2011; Sniehotta et al., 2014).

As interest in environmental behavioural change moved from a subset of the population to society wide and focused on organically bringing about pro-environmental behavioural change, governments, organisations and change-makers alike have realised the benefits of basing behavioural change strategies in theoretical models. Theory has a role at every stage of bringing about behavioural change: formulating desired outcomes, deciding on strategies, choosing a population to target, implementation, and evaluation. However, as this study and several before it has shown, behavioural change is complex, made up of personal, social and contextual influences (Fishbein & Ajzen, 2005; Jackson, 2005; Kollmuss & Agyeman, 2002; Shove, 2003). The findings of this study highlight the failure of two popular behaviour theories, the TPB and SPT, to fully theorise findings when used on their own during a behavioural change initiative. The recommendation is therefore that future studies of behavioural change initiatives use multiple theories, at different stages of the behavioural change initiative or in conjunction throughout.

Behaviour change initiatives or interventions can be defined as coordinated sets of activities designed to change specified behaviour patterns (Michie, Van Stralen, & West, 2011). A theory-based initiative provides the programme creators with a model that lends itself to an hypothesis of source of behaviour. This then informs the type of interventions that will be used, as well as determining how and what type of data should be generated to inform the analysis and reflection stages of the initiative. In addition, a theory-based initiative should enhance the transparency of the initiative and help others understand the strengths and weakness of the strategy or study, therefore allowing insights and conclusions to be adapted for future research and contexts (Fishbein & Ajzen, 2005). However, the findings of this study highlight the same issues Kollmuss and Agyeman (2002) highlighted, that a theoretical model can also have the effect of limiting the scope of the research when used as the sole lens of a study.

Popular behaviour theories such as the TPB and SPT can assist researchers and behavioural change agents at various critical times during an initiative; however, neither work at all stages of an initiative. The TPB has historically been used near the end of an initiative to analyse the strength of correlations between intentions, interventions and predicted future behavioural outcomes (Armitage & Conner, 1999). The conclusions from this model can be easily adapted into policy or future intervention

planning assumptions. However, the theory only measures a person's intent to take an action. For a behavioural change initiative that requires an additional stage, that of measuring actual behavioural change, the TPB does not offer any guidance (Sniehotta et al., 2014).

In contrast, in this study, the SPT was found to be useful during the data collection and analysing stages of the study. The three elements of the SPT model, images, skills and stuff, are intentionally general, allowing the model to be used in any context (Shove et al., 2012). The generalisation of the elements provided an easy framework within which to organise the data. However, unlike the TPB, SPT does not offer clear conclusions of success or failure in the model, only providing a detailed description of how the interventions are changing behaviour over time.

A weakness of both theories is the limited number of studies that have analysed pro-environmental behavioural change initiatives in a specific context, for example a workplace or educational institution. Further research could focus on expanding understanding of behavioural change in different communities of practice. Such research could include how different relationships affect the spread of a practice within a specific context, such as a religious institution or an apartment complex. Further study is also needed to gain insight into how specific power hierarchies and preferred communication styles in communities of practice affect the type of pro-environmental behavioural change strategies people attempt to enact.

7.5   Research limitations

This study was designed to carry out an in-depth exploration of how students perceived their role as change-makers in their school, what major enablers and barriers they encountered, as well as analysing what strategies the students used to bring about behavioural change. However, limitations such a small sample size, difficulty in identifying and exposing ontological change, and an inability to assess long-term change can be identified.

Firstly, while excessive generalisation of the data analysed in this study should be avoided, the insights into not only student-led change and pro-environmental behavioural change, but also into the usefulness of SPT in analysing behavioural change could be useful for future researchers and those looking to support student empowerment and social behavioural change.

Secondly, the data analysed from the focus group and individual interviews were limited to what the participants were willing to share. To limit the effect of this issue, data were generated from multiple sources and methods. For example, focus group interviews data were analysed in conjunction with the students' action plans, meeting minutes and my observations and field notes. The use of multiple data sources enabled triangulation of the data, increasing the trustworthiness of the analysis.

Finally, the length of the study did not allow for analysis of long-term change. This research was limited to one-year in each school and, therefore, any actions or changes in pro-environmental behaviour that occurred before or beyond the study could not be represented in the analysis or discussion chapters.

7.6 Final words

This study investigated students' perceptions of their roles as change-makers and how they attempted to bring about pro-environmental behavioural change in their school. The findings showed that EC members, student leaders and school staff had different expectations of what authentic student empowerment looked like and that structural and cultural limitations of student participation in decision-making affected the outcome of the behavioural change initiatives. This project explored how students evaluated the issue of behavioural change and analysed the behavioural change strategies these students enacted. The ECs, believing that their peers would respond to positive group learning and improvements in *stuff* that supported the targeted behaviour, spent the majority of their time negotiating with those in positions of power within the school to acquire that stuff, as well as engaging in short-term, social learning activities with their peers. In contrast, the staff involved did not see stuff as important. Next, the research used two popular behavioural change theories, the TPB and SPT, to theorise findings. Their usefulness in a specific community of practice was critiqued and the benefits and limitations of both theories in the socially dynamic context of a secondary school were identified. Finally, several avenues of further research were suggested to extend the understanding of how motivations, relationships, and physical settings affect pro-environmental behavioural change initiatives.

This project highlights the potential students have for leading positive change within their schools. Schools, communities and governments alike should be encouraged that youth today are finding ways to educate themselves about environmental issues and wanting to take action for a sustainable future. This study shows evidence that some schools are succeeding and promoting perceptions of agency in their students, at least temporarily. When students felt empowered, they stretched their traditional roles as passive students into motivated and capable young adults who wanted to be part of what made their school a great place for people and the environment. However, this study shows that no matter how motivated, smart, organised and capable students are, they cannot fully embrace new roles and responsibilities within their schools without the support of teachers and school administrators.

One cannot ignore the significance of a school's structural and cultural ethos in creating and sustaining authentic student empowerment, and the consequences of allowing students to attempt to become active participants in a system that is not designed to support them. The youth participants of this study have shown they are capable of understanding human impacts on the environment, and the consequences of failing to change how people use and interact with our natural resources. However, lingering teacher-centred teaching and behavioural change models found in schools today are actively working against students attempting to make positive change. As Toffler (1970) espoused 50 years ago, we need to actively seek to understand and encourage the contribution of youth to make the world a better place:

> *The secret message communicated to most young people today by the society around them is that they are not needed, that the society will run itself quite nicely until they — at some distant point in the future — will take over the reins. Yet the fact is that the society is not*

running itself nicely … because the rest of us need all the energy, brains, imagination and talent that young people can bring to bear down on our difficulties. For society to attempt to solve its desperate problems without the full participation of even very young people is imbecile.

Alvin Toffler (1970, p. 414)

Our current environmental problems demand action now, and society is not in a position to ignore or, even worse, hinder young people's attempts to bring about change that results in solutions.

Appendices

Appendix A: Key Terms

Change-maker	an individual that is actively taking action to bring about change.
Empower	refers to a structure and culture that supports change implemented by any person/group within the school; and encouragement of active participation from people of all abilities and roles (Hart, 2008).
Empowered student	a student that believes he or she has the skills and opportunity to bring about change (Duhon-Haynes, 1996; Mockler & Groundwater-Smith, 2015).
Enable	refers to actions taken by an individual or organisation that give authority and support to an person(s) attempting to take action.
Environmental council	a group of secondary students, typically between the ages of 14 and 18, that meet outside of scheduled class time to address environmental issues and organise pro-environmental events and activities.
Pro-environmental behaviour	refers to "behaviour that seeks to minimise the negative impacts of one's actions on the natural or built world" (Kollmuss & Agyeman, 2002, p. 240).
Student empowerment research	research evaluating the processes, successes and critiques of how schools enhance students' capacity to make choices and transform those choices into desired actions and outcomes (C. Gibson & Woolcock, 2005).
Student engagement research	research evaluating students' roles in the decision-making process.

Appendix B: EC general students focus group interview questions phase 1

Pre-Interview Introductions:

- Introduce myself
- Remind participants of the focus of this study
- Remind participants about the Confidentiality expectations and protocol
- Share the focus group discussion rules:
  - Only one person talks at a time
  - Everyone must respect each other at all times

Begin focus group discussion:

Each person introduces themselves, using pseudonym if stated on consent form

Questions:

- Do you feel like you understand your school's waste systems (waste, paper, compost, recycling)? Give some examples of what you know, don't know.
- What is the overall goal of the EC?
- What is your waste reduction goal this year? What actions are you planning on taking to make this happen?
- How would you describe your relationship with the people that run the waste systems at your school (groundspeople, room cleaners, administrator in charge of grounds and support staff, property manager)?
- Who/what will assist you during your waste reduction initiative this year?
- What are some potential difficulties?

End focus group discussion:

- Any other comments or things you would like to add?

Appendix C: EC student leaders focus group interview questions phase 1

Pre-Interview Introductions:

- Introduce myself
- Remind participants of the focus of this study
- Remind participants about the Confidentiality expectations and protocol
- Share the focus group discussion rules:
    - Only one person talks at a time
    - Everyone must respect each other at all times

Begin focus group discussion:

Each person introduces themselves, using pseudonym if stated on consent form

Questions:

- How did you become a student leader of EC?
- What do you think your role is as a student leader? Limitations?
- What do you want to accomplish this year? (waste focus)
- How do you plan on accomplishing this? Events, lessons, assemblies, etc.
- What/who do you think will help you be successful? Why?
- What/who do you think could be barriers to your success? Why?
- How confident are you that the EC will be able to reduce the schools waste?
- Previous waste reduction strategies, events, lessons that have worked or not worked?

End focus group discussion:

1. Any other comments or things you would like to add?

Appendix D: EC student leaders focus group discussion questions phase 3

Pre-Interview Introductions:

- Introduce myself
- Remind participants of the focus of this study
- Remind participants about the Confidentiality expectations and protocol
- Share the focus group discussion rules:
    - Only one person talks at a time
    - Everyone must respect each other at all times

Begin focus group discussion:

Each person introduces themselves, using pseudonym if stated on consent form

Questions:

- How did you find your year as a student leader of the EC?
    - Was there anything that you felt unprepared for?
    - How would you describe your relationship with the students on the EC?
    - In our first focus discussion you stated you felt "unsure" if you were empowered as a student leader, has that changed at all during the year?
- Did you accomplish what you wanted this year? Why and why not?
    - What/who do you think will help you be successful? Why?
    - What/who do you think could be barriers to your success? Why?
- Do you believe there was any change in behaviour of the students, positive or negative?
    - This year you spoke at assemblies, organised the waste audit w/ junior participation, a beach clean-up (anything else)? Did any of these change your peers' behaviour?
    - What/who do you think will help you be successful? Why?
    - What/who do you think could be barriers to your success? Why?
- Would you have done anything differently?
- Has your relationship with your key teacher, Property manager, Principal changed in anyway over the year?

End focus group discussion:

- Any other comments or things you would like to add?

Appendix E: Example of researcher's field notes

Wauconda High School 28/06 general meeting Field notes

Number of students: 24 students, 2 key teachers, 3 leaders   Topics: delay waste audit, bin labels design

Actions planned: EC general members are told to work on their own projects. The student leaders are not going to organise everything.

Reflection: The student leaders need to Teacher to bring the meeting to order, and transition to small group activities. Very much counting on the teacher to manage the meeting. The leaders are not confident at the end of the meeting that any real progress has been made.

Observations:

Leaders stood front of room, in effort to present united front, students start asking them, but Teacher still answers

Put back into commits: finance, media,

Students hard to organised

Teacher opens meeting with update. Has positive comment about number of students in attends.

Student leader 1 - call for junior leaders

Teacher points outs only 3 juniors, but says juniors are capable, want junior to take over term 4,

Teacher mentions tree planting during term 4, need to planning and planting, "as a leader not to many responsibility" one hand up (teacher approved) leaders didn't not know their name WSL2 and WSL3

Student asks about taking attendance, none being taken, students want attendance taken, stressed not going to be used to punish them

WSL1 apologised for waste audit delay,

Small groups:

Leaders still lead small groups, goal of small group unclear, ideas written on the board

Solar panels: financing, location, information, efficiency, safety

Bike power to make smoothies

Drain awareness, sustainable coastlines

Public Facebook, group chat to increase communication

Leave early: Teacher, 3 students

Student leaders discuss with supporting Teacher about pricing solar panels, she says not role of council

Appendix F: Principal site access consent form

CONSENT FORM

(Principal and Board of Trustees)

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project Title: Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Researcher: Amber Pierce, Dr Deidre Le Fevre and Dr Sally Birdsall

I have read the Participant Information Sheet, have understood the nature of the research and why the school has been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.
I give permission for the researcher to conduct focus group and individual interviews on my school's premises during scheduled EC meetings, students' study breaks or lunchtimes.
I give permission for the researcher to have access to documents that are relevant to the research, e.g Environmental Council's (EC) vision statement, action plan, meeting minutes, waste audit data, etc. to copy at her expense.
I give an assurance that:
- A staff member's decision to participate and/or assist the researcher with this project or not will have no effect on their employment status or relationship with my school.
- A student's decision to participate or not will have no effect on their relationship with the school or their academic standing.

I understand that:
In my role as Principal in this project:
- Staff members' and students' decisions to take part in this research are voluntary.
- I will approach the staff members that have an important role in the schools waste systems, e.g. the Property Manager, Head Groundsperson, Administrator and teacher that assists the EC to invite them to participate in two individual interviews on my behalf.
- I will also approach the teaching who supports the EC to request their assistance in organising the research.

Staff and the EC Supporting Teacher's roles in this project mean that:
- Staff members will participate in two individual interviews that will take 40 minutes of their time.
- Staff interviewees may withdraw their data up to three weeks after the last interview.
- The supporting teacher will approach members of the EC to invite them to participate in this study.
- The interviews will be audio-recorded and the recordings transcribed by a professional transcriber who has signed a confidentiality agreement.
- Staff participants will have their transcripts returned to them for editing. They will have two weeks to return them to the researcher and after that time, it will be assumed that the transcript is an accurate record.

Students' role in this project means that:
- Even though students will be able to given consent on their own behalf, an information letter will be sent home to inform parents/guardians of the research and enable them to discuss the research with their child.
- EC students will participate in a card sorting activity and focus group interview that will take 60 minutes of their time.
- EC members will be asked to create an action plan outlining the planned waste reduction initiative.

- An EC member will be asked to keep EC meeting minutes on a template the researcher will provide and the researcher will keep copies. If necessary, the minute-taker will clarify the minutes with the researcher following the meeting.
- In the event of the researcher needing to clarify minutes, the minute taker and students will be asked to give an undertaking not to disclose the identities of individuals when describing decisions that are made or debates that took place during meetings.
- Student leaders of the EC will indicate on the student consent form if they wish to participate in three smaller focus group interviews.
- The EC student leaders will participate in three additional focus group interviews throughout the year of about 40 minutes each.
- Students participating in the focus group interviews will be asked to give an undertaking to keep what is said in the interview confidential to members of the group.
- Students who agree to take part in any of the focus group interviews will not be able to withdraw their focus group interview data.
- The focus group interviews will be audio-recorded and the recordings transcribed by a professional transcriber who has signed a confidentiality agreement.
- Focus group interview transcripts will not be returned to students because any changes will alter the flow of the interview.

I further understand that:
- All participants will have their identities protected by the use of a pseudonym that they will nominate. Any identifying details about the school will be disguised.
- Because of the small number of participants taking part, it might be possible for someone in their school community to recognise their comments.
- Data will be used in the researcher's thesis, conference presentations and journal articles.
- Data will be securely stored at the University of Auckland in a locked filing cabinet or on a password-protected computer and completely destroyed after a period of six years.
- I will be provided with a research report using the contact details given below.

I agree that the research project *Empowered Youth: Agents of pro-environmental behavioural change in secondary schools* can be carried out at my school and I will approach the EC supporting teacher and staff to request their participation.

Name: _____

Signature: _____Date: _____

Contact Details: _____

_____

Appendix G: Staff information form

SCHOOL OF CURRICULUM AND PEDAGOGY
Te Kura o te Matauranga me te Ako
Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, 1023, New Zealand
T +64 9 373 7999
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92601
Symonds Street
Auckland 1135
New Zealand

PARTICIPANT INFORMATION SHEET

(Key Staff)

Title: Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Researchers: Amber Pierce, Dr Deidre Le Fevre and Dr Sally Birdsall

Researcher Introduction

My name is Amber Pierce and I am a student at the University of Auckland. I am currently enrolled in the doctoral programme. I am working under the guidance of Dr Le Fevre, a senior lecturer in the School of Learning, Development and Professional Practice, and Dr Birdsall, a senior lecturer in the School of Curriculum and Pedagogy at the University of Auckland's Faculty of Education and Social Work. The intention of my research is to investigate how secondary student-led waste minimisation initiatives can promote change in secondary students' waste disposal behaviour. I think that waste minimisation in schools is important because the New Zealand Government has identified schools as playing a critical part in achieving waste reduction goals.

Project description and invitation

In my research I would like to explore the factors that influence successful student-led waste reduction initiatives in secondary schools. I invite you to participate in my research. Your participation would involve two individual interviews that would take approximately 40 minutes each. Your participation is voluntary and your Principal has given an assurance that your decision to participate or not will have no effect on your employment status or relationship with the school.

Who is taking part?

Staff members who play a key role in your school's waste systems are being asked to participate in my research, e.g. the Property Manager and the Head Groundsperson.

What are you being asked to do?

As part of my research, I would like to interview you individually about your role in and perceptions of the student-led waste reduction initiatives being implemented in your school. You will be interviewed twice, once at the start of the implementation and then near its end at a time and place suitable for you. The interviews will last about 40 minutes and will be audio-recorded. At any time during the interview you can request to have the audio-tape stopped or refuse to answer any question. All audio-taped recordings will be transcribed by a professional transcriber who has signed a confidentiality agreement. Transcripts from the individual interviews will be returned to you for editing. You will have two weeks from its receipt to edit and return it to me. After that time it will be assumed that the transcript is accurate.

Withdrawal of Data and Confidentiality

In order to protect your identity, you will asked to nominate a pseudonym and this will be used in all reports. Any identifying details about the school will also be disguised. You may withdraw from my research project at any time up to three weeks after your final interview. After that time withdrawal of any data might affect its analysis. Because of the small number of participants in my research, it is possible that someone in the school community might recognise your comments.

Data storage/retention/destruction/future use

All hard data will be stored for six years in a locked filing cabinet at the University of Auckland. Electronic data will be kept on a password-protected computer. At the end of six years, all files will be completed destroyed. All hard copies of documents will be placed in a secured paper recycling bin and all electronic files will be deleted.

The data will be used for my thesis towards the degree of Doctor of Philosophy, in conference presentations and journal publications. A copy of the research findings will be made available to you.

If you have any questions, please get in touch with me, my supervisors or Head of School. Their contact details are below:

Amber Pierce: email apie007@aucklanduni.ac.nz, phone 09 623 8899 extn 48788

Dr Deidre Le Fevre (Supervisor): email d.lefevre@auckland.ac.nz or phone 09 923 9843

Dr Sally Birdsall (Supervisor): email s.birdsall@auckland.ac.nz or phone 09 623 8899 extn 48458

Associate Professor Lorri Santamaria (Head of School): email l.santamaria@auckland.ac.nz or phone 09 373 7999 extn 46353

What do you do now?

If you decide to participate my research, please sign the consent form and return it to me either by email or requesting a stamped addressed envelope from me.

Thank you for your time.
Amber Pierce

Appendix H: Staff consent form

CONSENT FORM

(Key Staff)

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Title: Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Researchers: Amber Pierce, Dr Deidre Le Fevre and Dr Sally Birdsall

I have read the Participant Information Sheet, have understood the nature of the research and why I have been invited to participate in two individual interviews. I have had the opportunity to ask questions and have them answered to my satisfaction.
I agree to take part in two individual interviews with the researcher at a time and place suitable for me. I agree for these interviews to be audio-recorded.
I understand that:

- My participation in the interviews is voluntary.
- My Principal has given an assurance that my decision to participate or not participate will have no effect on my employment status or relationship with the school.
- I will take part in two interviews, each taking about 40 minutes.
- During the interviews I can refuse to answer any questions or leave the interview at any time.
- My interviews will be audio-recorded and the audio-recordings will be transcribed by a professional transcriber who has signed a confidentiality agreement.
- The transcriptions will be returned to me for editing and I will have two weeks in which to return my edited transcripts to the researcher.
- I will have my identity protected by the use of a pseudonym that I will nominate. Any identifying details about the school will be disguised.
- Because of the small number of participants in each school, it might be possible for someone in my school community to recognise my comments.
- I may withdraw from the research at any time up until three weeks after the final interview.
- Data will be used in the researcher's thesis, conference presentations and journal articles.
- Data will be securely stored at the University of Auckland in a locked filing cabinet or on a password-protected computer and completely destroyed after a period of six years.
- I will be provided with a research report using the contact details given below.

Name: _____

Signature: _____Date: _____

Nominated Pseudonym: _____

Contact Details: _____

_____

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on 31 March 2016 for three years. Reference Number 016715.

Appendix I: Student information form

PARTICIPANT INFORMATION SHEET

(Senior Environmental Council Students)

Title: Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Researchers: Amber Pierce, Dr Deidre Le Fevre and Dr Sally Birdsall

Researcher Introduction

My name is Amber Pierce and as you may know, I am an Auckland Council Wastewise Facilitator tasked with assisting your school with its waste reduction goals. I am also a student at the University of Auckland studying for a Doctor of Philosophy degree. As part of my degree I am doing some research into an issue that is of concern to me. This topic is how student-led waste minimisation initiatives can promote change in secondary students' waste disposal behaviour.

Project description and invitation

I would like to find out what perceptions and understandings you have about waste and waste reduction in your school, how you go about changing waste behaviours and your identification of barriers and enablers throughout the initiative. To do this, I will be collecting data in a variety of ways, e.g. documents such as your action plan, meeting minutes, waste audit data along with a card sorting activity and a focus group discussion.

Your participation in my research is voluntary and, as you are aged 16 years or over, you can give consent on your own behalf. However, I have also written a letter for you to take home so that your parents/guardians will know about this research and you can talk with them about this research before deciding if you want to be part of it. Also, your Principal has given an assurance that your decision to be part of this research or not will have no effect on your assessment grades, status or relationship with the school.

I would like to invite you to take part in my research. I will also be asking other senior Environmental Council (EC) students from your school to take part in my research.

What am I being asked to do?

If you decide to take part in my research, you will be asked to take part in a card sorting activity and focus group interview with 3-4 other senior students in the EC. The activity and interview will take about 60 minutes, and occur during your lunchtime or study break.
The focus group interview will be audio-recorded. During the focus group interview the audio-recorder cannot be turned off but you can refuse to answer any questions or leave the interview at any time.
The audio-recording will be transcribed by a professional transcriber. The transcript of the focus group interview cannot be returned to you for editing because any changes made could affect the flow of the interview. Also, I ask that you to keep what is said in the focus group interview confidential to the group and not to discuss what has been said outside of the group.
Because the focus group interview contains information from a group, you will not be able to withdraw your contributions. If you tried to do this, it would affect the flow of the interview.
I will also observe your EC meetings and EC run events throughout the school year and make notes. However, if an EC student does not want me to observe, I will be asking other students to take minutes and then clarify the minutes with me following the meeting. If I do need to clarify the minutes of meetings, I am requesting that you give an undertaking not to disclose the identity of any of the students when the decisions made during the meeting or debates that take place during the meeting are described. In addition, I am requesting copies of documents relevant to student council guidelines and vision statement, as well as planning and reflection documentation from the EC, including waste

audit data, as well as the action plan created by the EC outlining the planned waste reduction initiative.

Furthermore, if you are an EC student leader, I would like to also invite you to participate in a further three focus group interviews with other EC student leaders that will be held throughout the year. If you wish to learn more about this opportunity, please give me your contact details using the attached consent form.

Confidentiality

In order to protect your identity, you will be asked to nominate a pseudonym– a made-up name or name you always wanted to be called – and this will be used in all reports. Any identifying details about the school will also be disguised. However, because of the small number of students taking part in the focus group interviews, there is the possibility that someone in the school community might recognise your comments.

Data storage/retention/destruction/future use

Your data will be kept securely. All hard data will be stored in a locked filing cabinet at the University of Auckland. Electronic data will be kept on a password-protected computer at the university. At the end of six years, all data will be completed destroyed.

The data will be used for my report towards my degree, in conference presentations and journal publications. A copy of the research findings will be made available to you if you provide me with your contact details on the page below in this letter. Your teacher will collect this page.

If you have any questions, please get in touch with me, my supervisors or Head of School. Our contact details are below:
Amber Pierce: email apie007@aucklanduni.ac.nz, phone 09 623 8899 extn 48788
Dr Deidre Le Fevre (Supervisor): email d.lefevre@auckland.ac.nz or phone 09 923 9843
Dr Sally Birdsall (Supervisor): email s.birdsall@auckland.ac.nz or phone 09 623 8899 extn 48458
Associate Professor Lorri Santamaria (Head of School): email l.santamaria@auckland.ac.nz or phone 09 373 7999 extn 46353

What do you do now?

If you would like to also take part in the research, please sign the consent form and return it to me by email or asking me for a stamped addressed envelope I have included.

If you would like a copy of a research report, please provide your contact details on the next page and hand it to your teacher or academic mentor.

Thank you for reading my letter.

Amber Pierce

Appendix J: Student consent form

CONSENT FORM

(Senior Environmental Council Students)

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Title: Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Researchers: Amber Pierce, Dr Deidre Le Fevre and Dr Sally Birdsall

I have read the Student Information Sheet, have understood the nature of the research and why I have been invited to participate in the interview. I have had the opportunity to ask questions and have them answered to my satisfaction.
I agree to take part in a focus group interview with Ms Pierce.
I agree for this focus group interview to be audio-recorded.
I undertake to keep what is said in the focus group interview confidential to those in the group and not discuss what was said with people not in the group.
I agree to my contributions to the creation of the action plan and to meetings being used by the researcher in her research.
I agree to take minutes of EC meetings if required and then clarify these minutes with Ms Pierce following the meetings.
I undertake to not disclose the identities of any students when describing decisions made or debates that take place during the meetings.
I understand that:

- My participation in the focus group interview is voluntary.
- My Principal has given an assurance that my decision to take part or not take part will have no effect on my assessment grades, status or relationship with the school.
- I will take part in a card sorting activity and a focus group interview that will last about 60 minutes.
- My Principal has given permission for this interview to take place on my school's premises and it will be held during my lunchtime or study break.
- The focus group interview will be audio-recorded and during the focus group interview I can refuse to answer any questions or leave the interview at any time but the audio-recorder cannot be stopped.
- The audio-recording of the focus group interview will be transcribed by a professional transcriber who has signed a confidentiality agreement.
- Because the interview is a group one, I cannot withdraw my contributions or edit the transcript because it could affect the flow of the interview.
- Because the action plan is created by the EC and the meeting minutes are also the result of a group activity, I will not be able to withdraw my contributions.
- I might be asked to take minutes of EC Council meetings.
- I will have my identity protected by the use of a pseudonym that I will nominate. Any identifying details about the school will also be disguised.
- Because of the small number of students taking part in the interviews, it might be possible for someone in my school community to recognise my comments.
- Data will be used in the researcher's thesis, conference presentations and journal articles.
- Data will be securely stored at the University of Auckland in a locked filing cabinet or on a password-protected computer and completely destroyed after a period of six years.
- I will be provided with a research report using the contact details given below.

Name: _____

154

Signature: _____Date: _____

Nominated Pseudonym: _____

I am an EC student leader and am interested in taking aprt in the smaller focus group interviews.

I give permission for Ms Pierce to contact me about taking part using my contact details:

Name: _____

Contact Details: _____

_____

Appendix K: Parent information form

Information Sheet

Parents/Guardians of Environmental Council Students

Title: Empowered Youth: Agents of pro-environmental behavioural change in secondary schools

Researchers: Amber Pierce, Dr Deidre Le Fevre and Dr Sally Birdsall

Researcher Introduction

My name is Amber Pierce and as you may know, I am an Auckland Council Wastewise Facilitator at your child's school. I am also a student at the University of Auckland and am studying for a Doctor of Philosophy degree. As part of my degree I am doing some research into an issue that is of concern to me. This topic is to investigate how student-led waste minimisation initiatives can promote change in secondary students' waste disposal behaviour.

Project description

Your child has been invited to take part in my research because they are part of the school's Council. To find out what perceptions and understandings your child has about waste and waste reduction in their school, how they go about changing waste behaviours and their identification of barriers and enablers throughout the initiative, I will be collecting data from your child using a card sorting activity and their contributions to a focus group activity. I will also collect data from documents such as the action plan created by the Environmental Council and their meeting minutes. Because your child is aged 16 years or over, he/she is able to give consent on their own behalf, but I have written this letter so that you know about my research.

Your child's participation in my research is voluntary. Also, the Principal has given an assurance that your child's decision to be part of this research or not will have no effect on their assessment grades, status or relationship with the school.

What is your child being asked to do?

Before giving consent to take part in my research, your child will have an opportunity to ask questions about my research and discuss it with you. If your child does decide to take part, they will complete a card sorting activity and participate in a focus group interview with other senior students from the Environmental Council that will take about 60 minutes. The Principal has given permission for this interview to be held on school premises during one of your child's lunchtimes or study breaks.

The focus group interview will be audio-recorded. During the focus group interview the audio-recorder cannot be turned off but your child can refuse to answer any questions or leave the interview at any time. The audio-recording will be transcribed by a professional transcriber. Your child will not be able to edit the transcript or withdraw their contributions because any changes made following the interview could affect the flow of the interview.
I will also collect data by observing Environmental Council meetings and EC run events throughout the school year. In addition, I am taking copies of documents such as student council guidelines and vision statement, the action plan outlining the planned waste reduction initiative, Environmental Council planning and reflection documentation and meeting minutes. Copies off all documentation will be at my expense.

Confidentiality

In order to protect your child's identity, he/she will be asked to nominate a pseudonym – a made-up name or name he/she always wanted to be called – and this will be used in all reports. Any identifying details about the school will also be disguised. Also, I will ask your child to keep what is said in the focus group interview confidential to the group and not to discuss what has been said outside of the group. However, because of the small number of students taking part in the focus group interview, there is the possibility that someone in the school community might recognise your child's comments.

Data storage/retention/destruction/future use

Your child's data will be kept securely. All hard data will be stored in a locked filing cabinet at the University of Auckland. Electronic data will be kept on a password-protected computer at the university. At the end of six years, all data will be completed destroyed.

The data will be used for my report towards my degree, in conference presentations and journal publications. A copy of the research findings will be made available to your child and the Principal.

If you have any questions, please get in touch with me, my supervisors or Head of School. Our contact details are below:
Amber Pierce: email apie007@aucklanduni.ac.nz, phone 09 623 8899 extn 48788
Dr Deidre Le Fevre (Supervisor): email d.lefevre@auckland.ac.nz or phone 09 923 9843
Dr Sally Birdsall (Supervisor): email s.birdsall@auckland.ac.nz or phone 09 623 8899 extn 48458
Associate Professor Lorri Santamaria (Head of School): email l.santamaria@auckland.ac.nz or phone 09 373 7999 extn 46353

Amber Pierce

References

Adolphs, R. (2002). Neural systems for recognizing emotion. *Current Opinion in Neurobiology, 12*(2), 169–177.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckham (Eds.), *Action control: From cognition to behaviour* (pp. 11–39). Heidelberg, Germany: Springer.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

Alvesson, M., & Sköldberg, K. (2009). *Reflexive methodology: New vistas for qualitative research* (2nd ed.). London, UK: SAGE.

Andersen, A. (2011, August). Student voice: More than terminology. *Connect.*

Antholis, W., & Talbott, S. (2010). *Fast forward: Ethics and politics in the age of global warming.* Washington, DC: Brookings Institution Press.

Armitage, C. J., & Conner, M. (1999). The theory of planned behaviour: Assessment of predictive validity and perceived control. *British Journal of Social Psychology, 38*(1), 35–54.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216–224.

Auckland Council. (2011). *Auckland Council waste assessment.* Retrieved from http://www.aucklandcouncil.govt.nz/EN/environmentwaste/rubbishrecycling/wastemanagemen tandminimisationplan/Documents/wasteassess-report.pdf

Auckland Council. (2017). *Auckland's waste assessment 2017.* Retrieved from https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/docswastemanagementplan/waste-assessment-2017.pdf

Auckland Council. (2018). *Auckland waste management and minimisation plan 2018.* Retrieved from https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/docswastemanagementplan/auckland-waste-management-minimisation-plan.pdf

Bahou, L. (2011). Rethinking the challenges and possibilities of student voice and agency. *Educate~, 1*(1), 2–14.

Barrett, V. (2018, 14 December). A youth activist on the climate crisis: Politicians won't save us. *The Guardian.* Retrieved from https://www.theguardian.com/science/2018/dec/14/climate-change-young-people-cop24-conference

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report, 13*(4), 544–559.

Beane, J. A., & Apple, M. W. (1995). The case for democratic schools. In J. A. Beane & M. W. Apple (Eds.), *Democratic schools* (pp. 1–25). Alexandria, VA: The Association for Supervision and Curriculum Development.

Beattie, H. (2012). Amplifying student voice: The missing link in school transformation. *Management in Education, 26*(3), 158–160.

Ben-Aryeh, A., Frønes, I., Casas, F., & Korbin, J. E. (Eds.). (2014). *Handbook of child well-being: Theories, methods and policies in global perspective.* Dordrecht, The Netherlands: Springer.

Birdsall, S., & Glasgow, B. (2014). Creating a new pathway for learning using education for sustainability. *SET: Research Information for Teachers, 2*, 41–47.

Biswas, A., Licata, J. W., McKee, D., Pullig, C., & Daughtridge, C. (2000). The recycling cycle: An empirical examination of consumer waste recycling and recycling shopping behaviors. *Journal of Public Policy & Marketing, 19*(1), 93–105.

Blakemore, E. (2018). Youth in revolt: Five powerful movements fueled by young activists. Retrieved from https://news.nationalgeographic.com/2018/03/youth-activism-young-protesters-historic-movements/

Bourdieu, P. (1977). *Outline of a theory of practice* (R. Nice, Trans. Vol. 16). Cambridge, UK: Cambridge University Press.

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27–40.

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: SAGE.

Brasof, M. (2015). *Student voice and school governance: Distributing leadership to youth and adults*. New York, NY: Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Brinkhurst, M., Rose, P., Maurice, G., & Ackerman, J. D. (2011). Achieving campus sustainability: Top-down, bottom-up, or neither? *International Journal of Sustainability in Higher Education, 12*(4), 338–354.

Brown, L., & Petrie, S. (2006). *New Zealand's greenhouse gas inventory 1990–2004*. Retrieved from http://www.climatechange.govt.nz/resources/reports/nir-apr06/index.html

Bulkeley, H., & Betsill, M. (2005). Rethinking sustainable cities: Multilevel governance and the 'urban' politics of climate change. *Environmental Politics, 14*(1), 42–63.

Calder, B. J. (1977). Focus groups and the nature of qualitative marketing research. *Journal of Marketing research, 14*(3), 353–364.

Chava, F.-N., & David, N. (1996). *Research methods in the social sciences* (5th ed.). London, UK: Edward Arnold.

Cheney, G. (1983). On the various and changing meanings of organizational membership: A field study of organizational identification. *Communications Monographs, 50*(4), 342–362.

Clarke, J., Newman, J., Smith, N., Vidler, E., & Westmarland, L. (2007). *Creating citizen-consumers: Changing publics and changing public services.* London, UK: SAGE.

Clayton, S., Devine-Wright, P., Stern, P. C., Whitmarsh, L., Carrico, A., Steg, L., . . . Bonnes, M. (2015). Psychological research and global climate change. *Nature Climate Change, 5*(7), 640–646.

Cohen, D., & Crabtree, B. (2006). Qualitative research guidelines project. Retrieved from http://www.qualres.org/index.html

Cohen, L., Manion, L., & Morrison, K. (2013). *Research methods in education* (7th ed.). Oxon, UK: Routledge.

Connell, S., Fien, J., Sykes, H., & Yencken, D. (2014). Young people and the environment in Australia: Beliefs, knowledge, commitment and educational implications. *Australian Journal of Environmental Education, 30*(1), 78–87.

Conner, M., Godin, G., Sheeran, P., & Germain, M. (2013). Some feelings are more important: Cognitive attitudes, affective attitudes, anticipated affect, and blood donation. *Health Psychology, 32*(3), 264–272.

Cook, I., & Crang, M. (1995). *Doing ethnographies.* Norwich, UK: University of East Anglia.

Cook-Sather, A. (2002). Authorizing students' perspectives: Toward trust, dialogue, and change in education. *Educational Researcher, 31*(4), 3–14.

Cook-Sather, A. (2006). 'Change based on what students say': Preparing teachers for a paradoxical model of leadership. *International Journal of Leadership in Education, 9*(4), 345–358.

Craig, J., Anderson, S., Clout, M., Creese, B., Mitchell, N., Ogden, J., . . . Ussher, G. (2000). Conservation issues in New Zealand. *Annual Review of Ecology and Systematics, 31*, 61–78.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice, 39*(3), 124–130.

Damerell, P., Howe, C., & Milner-Gulland, E. (2013). Child-orientated environmental education influences adult knowledge and household behaviour. *Environmental Research Letters, 8*(1). doi:10.1088/1748-9326/8/1/015016

Darnton, A. (2008). *Reference report: An overview of behaviour change models and their uses.* Retrieved from http://www.peecworks.org/PEEC/PEEC_Gen/01796129-001D0211.0/Darnton%202008%20Overview%20of%20behavior%20change%20models%20and%20uses.pdf

Davidson, L. (2018, December 16). 15-year-old climate activist accuses world leaders at COP24 of stealing kids' futures. *CNN.* Retrieved from https://edition.cnn.com/2018/12/16/world/greta-thunberg-cop24/index.html

De Fina, A., Schiffrin, D., & Bamberg, M. (Eds.). (2006). *Discourse and identity* (Vol. 23). New York, NY: Cambridge University Press.

Department of Education and Skills. (2004). *Working together: Giving children and young people a say.* London, UK: HMSO.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education.* New York, NY: Free Press.

Diggins, T. (1999). The face of things to come. *Encompass, 3*(4), 4–6.

Dovidio, J. F., Piliavin, J. A., Schroeder, D. A., & Penner, L. A. (2017). *The social psychology of prosocial behavior.* New York, NY: Psychology Press.

Duhon-Haynes, G. M. (1996). *Student empowerment: Definition, implications, and strategies for implementation.* Paper presented at the Third World Symposium, Grambling, Louisiana. Paper retrieved from

Dunn, K. I., Mohr, P., Wilson, C. J., & Wittert, G. A. (2011). Determinants of fast-food consumption. An application of the Theory of Planned Behaviour. *Appetite, 57*(2), 349–357.

Duvall, J., & Zint, M. (2007). A review of research on the effectiveness of environmental education in promoting intergenerational learning. *The Journal of Environmental Education, 38*(4), 14–24.

Dworkin, A. G., Saha, L. J., & Hill, A. N. (2003). Teacher burnout and perceptions of a democratic school environment. *International Education Journal, 4*(2), 108–120.

Eames, C., & Barker, M. (2011). Understanding student learning in environmental education in Aotearoa New Zealand. *Australian Journal of Environmental Education, 27*(01), 186–191.

Eames, C., Barker, M., Wilson-Hill, F., & Law, B. (2010). *Investigating the relationship between whole-school approaches to education for sustainability and student learning. A summary.* Retrieved from Wellington, New Zealand:

Eames, C., Bolstad, R., & Robertson, M. (2008). *The state of environmental education in New Zealand: A baseline assessment of provision in the formal education sector in 2006.* Retrieved from http://assets.wwf.org.nz/downloads/state_environmental_education_nzschools.pdf

Eames, C., Cowie, B., & Bolstad, R. (2008). An evaluation of characteristics of environmental education practice in New Zealand schools. *Environmental Education Research, 14*(1), 35–51.

Eisenhardt, K. M. (1991). Better stories and better constructs: The case for rigor and comparative logic. *Academy of Management Review, 16*(3), 620–627.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal, 50*(1), 25–32.

Ereaut, G., & Segnit, N. (2006). *Warm words: How are we telling the climate story and can we tell it better?* Retrieved from https://www.ippr.org/publications/warm-wordshow-are-we-telling-the-climate-story-and-can-we-tell-it-better

Ernest, P. (1999). Forms of knowledge in mathematics and mathematics education: Philosophical and rhetorical perspectives. *Educational Studies in Mathematics, 38*(1–3), 67–83. doi:10.1023/A:1003577024357

European Environment Agency. (2014). Life-cycle chain from extraction through production to consumption and waste. Retrieved from http://www.eea.europa.eu/soer/synthesis/synthesis/chapter4.xhtml#anchor-41-anchor

Farthing, R. (2012). Why youth participation? Some justifications and critiques of youth participation using New Labour's youth policies as a case study. *Youth and Policy, 109*, 71–97.

Fielding, M. (2001). Students as radical agents of change. *Journal of Educational Change, 2*(2), 123–141.

Fielding, M. (2004). Transformative approaches to student voice: Theoretical underpinnings, recalcitrant realities. *British Educational Research Journal, 30*(2), 295–311.

Fielding, M. (2011). Patterns of partnership: Student voice, intergenerational learning and democratic fellowship. In N. Mockler & J. Sachs (Eds.), *Rethinking educational practice through reflexive inquiry* (Vol. 7, pp. 61–75). Dordrecht, The Netherlands: Springer.

Fielding, M., & Prieto, M. (2002). The central place of student voice in democratic renewal: A Chilean case study. In M. Schweisfurth, L. Davies, & C. Harber (Eds.), *Learning democracy and citizenship: International experiences* (pp. 19–36). Oxford, UK: Symposium Books.

Fine, M., & Weis, L. (1999). *The unknown city: Lives of poor and working-class young adults.* Boston, MA: Beacon Press.

Fishbein, M., & Ajzen, I. (2005). Theory-based behavior change interventions: Comments on Hobbis and Sutton. *Journal of Health Psychology, 10*(1), 27–31.

Flyvbjerg, B. (1998). *Rationality and power: Democracy in practice.* Chicago, IL: University of Chicago Press.

Fuhrmann, D., Knoll, L. J., & Blakemore, S.-J. (2015). Adolescence as a sensitive period of brain development. *Trends in Cognitive Sciences, 19*(10), 558–566.

Gibson, C., & Woolcock, M. (2005). Empowerment and Local Level Conflict Mediation in the Kecamatan Development Project in Indonesia: Concepts, Measures and Project Efficacy. *Policy Research Working Paper, 3292.*

Gibson, J. E. (2012). Interviews and focus groups with children: Methods that match children's developing competencies. *Journal of Family Theory & Review, 4*(2), 148–159.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration.* Berkeley, CA: University of California Press.

Giddens, A. (2009). *Politics of climate change.* Cambridge, UK: Polity.

Gifford, R. (2014). Environmental psychology matters. *Annual Review of Psychology, 65*(1), 541–579. doi:10.1146/annurev-psych-010213-115048

Gilligan, C. (2012). Can post modernism contribute to saving the world? In R. McClean (Ed.), *Proceedings of the 11th European conference on research methods* (pp. 461–469). Bolton, UK: Academic Publishing International.

Giroux, H. A. (1984). *Ideology, culture, and the process of schooling.* Philadelphia, PA: Temple University Press.

Göckeritz, S., Schultz, P., Rendón, T., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2010). Descriptive normative beliefs and conservation behavior: The moderating roles of personal involvement and injunctive normative beliefs. *European Journal of Social Psychology, 40*(3), 514–523.

Godin, G., & Kok, G. (1996). The Theory of Planned Behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion, 11*(2), 87–98.

Graham, A., Truscott, J., Simmons, C., Anderson, D., & Thomas, N. (2018). Exploring student participation across different arenas of school life. *British Educational Research Journal, 44*(6), 1029–1046. doi:10.1002/berj.3477

Grannis, J. C. (1978). Task engagement and the consistency of pedagogical controls: An ecological study of differently structured classroom settings. *Curriculum Inquiry, 8*(1), 3–36.

Gredler, M. E. (2005). *Learning and instruction: Theory into practice.* Upper Saddle River, NJ: Pearson.

Grønhøj, A., & Thøgersen, J. (2009). Like father, like son? Intergenerational transmission of values, attitudes, and behaviours in the environmental domain. *Journal of Environmental Psychology, 29*(4), 414–421.

Halkier, B., Katz-Gerro, T., & Martens, L. (2011). Applying practice theory to the study of consumption: Theoretical and methodological considerations. *Journal of Consumer Culture, 11*(1), 3–13.

Hardeman, W., Johnston, M., Johnston, D., Bonetti, D., Wareham, N., & Kinmonth, A. L. (2002). Application of the theory of planned behaviour in behaviour change interventions: A systematic review. *Psychology and Health, 17*(2), 123–158.

Hargreaves, T. (2008). *Making pro-environmental behaviour work: An ethnographic case study of practice, process and power in the workplace.* (Doctoral thesis), University of East Anglia, Norwich, UK. Retrieved from http://ueaeprints.uea.ac.uk/10622/

Hargreaves, T. (2011). Practice-ing behaviour change: Applying social practice theory to pro-environmental behaviour change. *Journal of Consumer Culture, 11*(1), 79–99.

Harris, A., Wyn, J., & Younes, S. (2010). Beyond apathetic or activist youth: 'Ordinary' young people and contemporary forms of participation. *Young, 18*(1), 9–32. doi:10.1177/110330880901800103

Hart, R. (1987). Children's participation in planning and design. In C. S. Weinstein & T. G. David (Eds.), *Spaces for children* (pp. 217–239). Boston, MA: Springer.

Hart, R. (2008). Stepping back from 'The ladder': Reflections on a model of participatory work with children. In A. Reid, B. B. Jensen, J. Nikel, & V. Simovska (Eds.), *Participation and learning* (pp. 19–31). Dordrecht, The Netherlands: Springer.

Hart, R. (2010). No longer a "little added frill": The transformative potential of environmental education for educational change. *Teacher Education Quarterly, 37*(4), 155–177.

Heath, Y., & Gifford, R. (2002). Extending the theory of planned behavior: Predicting the use of public transportation. *Journal of Applied Social Psychology, 32*(10), 2154–2189.

Herriot, L. (2013). The presence of an absence: Youth participation in macro-level educational reform. *Citizenship Teaching & Learning, 9*(1), 35–52.

Hicks, D. (1996). A lesson for the future: Young people's hopes and fears for tomorrow. *Futures, 28*(1), 1–13.

Higginson, S. L., McKenna, E., & Thomson, M. (2014). *Can practice make perfect (models)? Incorporating social practice theory into quantitative energy demand models*. Paper presented at the Third Behave Energy Conference, Oxford, UK. Paper retrieved from https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/15975/1/Higginson%2C%202014%2C%20Can%20practice%20make%20perfect%20models.pdf

Hine, D. W., Bhullar, N., Marks, A. D., Kelly, P., & Scott, J. G. (2011). Comparing the effectiveness of education and technology in reducing wood smoke pollution: A field experiment. *Journal of Environmental Psychology, 31*(4), 282–288.

Hine, D. W., Gifford, R., Heath, Y., Cooksey, R., & Quain, P. (2009). A cue utilization approach for investigating harvest decisions in commons dilemmas. *Journal of Applied Social Psychology, 39*(3), 564–588.

Hines, J. M. (1984). *Analysis and synthesis of research on responsible environmental behavior.* (Unpublished doctoral thesis), Southern Illinois University, Carbondale, IL.

Hodkinson, P., & Hodkinson, H. (2001). *The strengths and limitations of case study research.* Paper presented at the learning and skills development agency conference at Cambridge.

Holdsworth, R. (2000). Schools that create real roles of value for young people. *Prospects, 30*(3), 349–362.

Howley, D., & Tannehill, D. (2014). "Crazy ideas": Student involvement in negotiating and implementing the physical education curriculum in the Irish senior cycle. *The Physical Educator, 71*(3). Retrieved from https://js.sagamorepub.com/pe/article/view/2687

Hunter, L. M., Hatch, A., & Johnson, A. (2004). Cross-national gender variation in environmental behaviors. *Social Science Quarterly, 85*(3), 677–694.

Ingram, P. B., Warlick, C. A., Ternes, M. S., & Krieshok, T. S. (2017). Examining the feasibility of the integrated hope scale in American college students. *Counselling Psychology Quarterly, 31*(3), 336–352. doi:10.1080/09515070.2017.1318111

Jackson, T. (2005). *Motivating sustainable consumption: A review of evidence on consumer behaviour and behavioural change, sustainable development research network*. Retrieved from http://sustainablelifestyles.ac.uk/sites/default/files/motivating_sc_final.pdf

James, M. (2006). How the rights-based approach to development contributes to building citizenship in childhood and adolescence. Retrieved from https://archive.crin.org/en/library/news-archive/how-rights-based-approach-development-contributes-building-citizenship.html

Jensen, B. B., & Schnack, K. (1997). The action competence approach in environmental education. *Environmental Education Research, 3*(2), 163–178.

Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*(4), 602–611.

Jones, M. V., Coviello, N., & Tang, Y. K. (2011). International entrepreneurship research (1989–2009): A domain ontology and thematic analysis. *Journal of Business Venturing, 26*(6), 632–659.

Karnieli-Miller, O., Strier, R., & Pessach, L. (2009). Power relations in qualitative research. *Qualitative Health Research, 19*(2), 279–289.

Kirk, C. M., Lewis, R. K., Brown, K., Karibo, B., Scott, A., & Park, E. (2017). The empowering schools project: Identifying the classroom and school characteristics that lead to student empowerment. *Youth & Society, 49*(6), 827–847.

Knoll, L. J., Magis-Weinberg, L., Speekenbrink, M., & Blakemore, S.-J. (2015). Social influence on risk perception during adolescence. *Psychological Science, 26*(5), 583–592.

Koelsch, L. E. (2013). Reconceptualizing the member check interview. *International Journal of Qualitative Methods, 12*(1), 168–179.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research, 8*(3), 239–260.

Krantzberg, G., Tanik, A., do Carmo, J. S. A., Indarto, A., & Ekdal, A. (Eds.). (2010). *Advances in water quality control*. Wuhan, China: Scientific Research Publishing.

Krnel, D., & Naglic, S. (2009). Environmental literacy comparison between eco-schools and ordinary schools in Slovenia. *Science Education International, 20*(1/2), 5–24.

Kuhn, T. S., & Hawkins, D. (1963). The structure of scientific revolutions. *American Journal of Physics, 31*(7), 554–555.

Kvale, S., & Brinkman, S. (2009). *InterViews: Learning the craft of research interviewing*. Los Angeles, CA: SAGE.

Kyburz-Graber, R. (2004). Does case-study methodology lack rigour? The need for quality criteria for sound case-study research, as illustrated by a recent case in secondary and higher education. *Environmental Education Research, 10*(1), 53–65.

Labowitz, S., & Baumann-Pauly, D. (2014). *Business as usual is not an option*. Retrieved from http://www.stern.nyu.edu/sites/default/files/assets/documents/con_047408.pdf

Ladson-Billings, G., & Tate IV, W. (1995). Toward a critical race theory of education. *The Teachers College Record, 97*(1), 47–68.

Lankshear, C., & Knobel, M. (2004). *A handbook for teacher research*. Maidenhead, UK: Open University Press.

Le Grand, J. (2009). *The other invisible hand: Delivering public services through choice and competition*. Princeton, NJ: Princeton University Press.

LeDoux, J. E. (2000). Emotion circuits in the brain. *Annual Review of Neuroscience, 23*(1), 155–184.

Levin, D., & Arafeh, S. (2003). *The digital disconnect: The widening gap between internet-savvy students and their schools*. Retrieved from http://www.pewinternet.org/2002/08/14/the-digital-disconnect-the-widening-gap-between-internet-savvy-students-and-their-schools/

Levin, J., & Milgrom, P. (2004). Introduction to choice theory. Retrieved from https://web.stanford.edu/~jdlevin/Econ%20202/Choice%20Theory.pdf

Levine, D. S., & Strube, M. J. (2012). Environmental attitudes, knowledge, intentions and behaviors among college students. *The Journal of Social Psychology, 152*(3), 308–326.

Li, C. J., & Monroe, M. C. (2017). Exploring the essential psychological factors in fostering hope concerning climate change. *Environmental Education Research*, 1–19. doi:10.1080/13504622.2017.1367916

Libet, B. (2006). Reflections on the interaction of the mind and brain. *Progress in Neurobiology, 78*(3–5), 322–326.

Lichtman, M. (2013). *Qualitative research in education: A user's guide* (3rd ed.). Thousand Oaks, CA: SAGE.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: SAGE.

Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Evaluation, Summer*(30), 73–84.

Linke, R. D. (1980). *Environmental education in Australia*. Sydney, Australia: George Allen & Unwin.

Lodge, C. (2005). From hearing voices to engaging in dialogue: Problematising student participation in school improvement. *Journal of Educational Change, 6*(2), 125–146.

Lucas, A. M. (1979). *Environment and environmental education: Conceptual issues and curriculum implications*. Victoria, Australia: Australia International Press and Publications.

Lucas, N. (2013). *An assessment and guide to the best practices of statewide environmental youth interest groups.* (Honor's thesis), University of Arizona, Retrieved from https://repository.arizona.edu/handle/10150/297706

Lucas, T. (1998). Youth gangs and moral panics in Santa Cruz, California. In T. Skelton & G. Valentine (Eds.), *Cool places: Geographies of youth cultures* (pp. 145–160). New York, NY: Routledge.

Lynch, K., & Lodge, A. (2004). *Equality and power in schools: Redistribution, recognition and representation*. London, UK: Routledge.

MacBeath, J., Demetriou, H., Rudduck, J., & Myers, K. (2003). *Consulting pupils: A toolkit for teachers*. Cambridge, UK: Pearson.

Marion, Y. I. (1990). *Justice and the politics of difference*. Princeton, NJ: Princeton University Press.

Marshall, C., & Rossman, G. B. (2015). *Designing qualitative research* (6th ed.). Thousand Oaks, CA: SAGE.

McKay, L. (2010, April 6). Generation green. *Customer Relationship Management,* 12–13.

McMahon, M. (1997). *Social constructivism and the world wide web – A paradigm for learning*. Paper presented at the ASCILITE conference, Perth, Australia. Paper retrieved from

McQuillan, P. J. (2005). Possibilities and pitfalls: A comparative analysis of student empowerment. *American Educational Research Journal, 42*(4), 639–670. doi:10.3102/00028312042004639

McStay, J. R., & Dunlap, R. E. (1983). Male–female differences in concern for environmental quality. *International Journal of Women's Studies, 6*(4), 291–301.

Meinhold, J. L., & Malkus, A. J. (2005). Adolescent environmental behaviors: Can knowledge, attitudes, and self-efficacy make a difference? *Environment and Behavior, 37*(4), 511–532.

Meneses, G. D., & Palacio, A. B. (2005). Recycling behavior a multidimensional approach. *Environment and Behavior, 37*(6), 837–860.

Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Meyer, C. B. (2001). A case in case study methodology. *Field Methods, 13*(4), 329–352.

Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science, 6*(42). doi:10.1186/1748-5908-6-42

Ministry for the Environment. (2011). New Zealand waste strategy: Reducing harm, improving efficiency. Retrieved from http://www.mfe.govt.nz/publications/waste/new-zealand-waste-strategy-reducing-harm-improving-efficiency

Ministry for the Environment. (2014). Climate change impacts in New Zealand. Retrieved from http://www.mfe.govt.nz/climate-change/how-climate-change-affects-nz

Ministry of Business Innovation and Employment. (2019). *Choosing a school.* Retrieved from https://www.newzealandnow.govt.nz/living-in-nz/education/choosing-school.

Ministry of Education. (2007). *The New Zealand Curriculum*. Wellington, New Zealand: Learning Media.

Ministry of Education. (2015). *Total number of schools by school type at 1 July 2009–2014.* Retrieved from https://www.educationcounts.govt.nz/statistics/schooling/number-of-schools

Ministry of Youth Development. (n.d.). A guide for local government – An introduction to youth particpation. Retrieved from http://www.myd.govt.nz/resources-and-reports/publications/local-government.html

Mockler, N., & Groundwater-Smith, S. (2015). Approaches to student voice: 'Empowerment', 'evidence-based practice' and participation. In N. Mockler & S. Groundwater-Smith (Eds.), *Engaging with student voice in research, education and community* (pp. 37–50). Dordrecht, The Netherlands: Springer.

Montgomery, A., & Kehoe, I. (Eds.). (2016). *Reimagining the purpose of schools and educational organisations.* Dordrecht, The Netherlands: Springer.

Myers, T. A., Maibach, E. W., Roser-Renouf, C., Akerlof, K., & Leiserowitz, A. A. (2013). The relationship between personal experience and belief in the reality of global warming. *Nature Climate Change, 3*(4), 343–347.

Neuman, W. L. (2005). *Social research methods: Quantitative and qualitative approaches* (5th ed.). Boston, MA: Allyn and Bacon

Neuman, W. L., & Kreuger, L. (2003). *Social work research methods: Qualitative and quantitative approaches.* Boston, MA: Allyn and Bacon.

Nicolini, D. (2012). *Practice theory, work, and organization: An introduction.* Oxford, UK: Oxford University Press.

Norsk Hydro. (2016). How it's made. Retrieved from http://www.hydro.com/en/About-aluminium/How-its-made/

NZ Herald. (2018a, January 7). Poll reveals lake, river polution key concern for kiwis. *NZ Herald.* Retrieved from https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11970982

NZ Herald. (2018b, December 3). Whangārei students picking up other people's 'gross' rubbish. *NZ Herald.* Retrieved from https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=12169103

Ogden, J. (2003). Some problems with social cognition models: A pragmatic and conceptual analysis. *Health Psychology, 22*(4), 424–428.

Ojala, M. (2008). Recycling and ambivalence quantitative and qualitative analyses of household recycling among young adults. *Environment and Behavior, 40*(6), 777–797.

Ojala, M. (2012). Hope and climate change: The importance of hope for environmental engagement among young people. *Environmental Education Research, 18*(5), 625–642.

Ojala, M. (2016). Young people and global climate change: Emotions, coping, and engagement in everyday life. In N. Ansell, N. Klocker, & T. Skelton (Eds.), *Geographies of global issues: Change and threat* (pp. 1–19). Singapore: Springer.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533–544.

Palleschi, A. (2018). After youth activists storm their offices, 13 more House members agree to support a Green New Deal. Retrieved from http://inthesetimes.com/article/21633/green-new-deal-sunrise-climate-ocasio-cortez-pelosi-hoyer-sit-in-arrests

Parliamentary Commissioner for the Environment. (2004). *See change: Learning and education for sustainability*. Retrieved from https://www.pce.parliament.nz/publications/archive/1997-2006/see-change-learning-and-education-for-sustainability

Patton, M. (1990). *Qualitative evaluation and research methods* (2nd ed.). Thousand Oaks, CA: SAGE.

Percy-Smith, B., & Burns, D. (2013). Exploring the role of children and young people as agents of change in sustainable community development. *Local Environment, 18*(3), 323–339.

Perkins, D. D., & Zimmerman, M. A. (1995). Empowerment theory, research, and application. *American Journal of Community Psychology, 23*(5), 569–579.

Pettersson, A. (2014). *De som inte kan simma kommer nog att dö!: En studie om barns tankar och känslor rörande klimatförändringarna.* (Licentiate thesis), Uppsala University, Uppsala, Sweden.

Pittman, K., & Irby, M. A. (1998). *Reflections on a decade of promoting youth development*. Retrieved from Takoma Park, MA:

Powell, J. T., Townsend, T. G., & Zimmerman, J. B. (2015). Estimates of solid waste disposal rates and reduction targets for landfill gas emissions. *Nature Climate Change, 6*(2), 162–165.

Prawat, R. S., & Floden, R. E. (1994). Philosophical perspectives on constructivist views of learning. *Educational Psychologist, 29*(1), 37–48.

Punch, K. F. (2009). *Introduction to research methods in education*. London, UK: SAGE.

Quiroz, P. A. (2001). The silencing of Latino student "voice": Puerto Rican and Mexican narratives in eighth grade and high school. *Anthropology & Education Quarterly, 32*(3), 326–349.

Reckwitz, A. (2002). Toward a theory of social practices: A development in culturalist theorizing. *European Journal of Social Theory, 5*(2), 243–263.

Robinson, C., & Taylor, C. (2013). Student voice as a contested practice: Power and participation in two student voice projects. *Improving Schools, 16*(1), 32–46.

Rogoff, B. (1991). Social interaction as apprenticeship in thinking: Guided participation in spatial planning. In L. B. Resnick, J. M. Levine, & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 349–364). Washington, DC: American Psychological Association.

Roth, J. (2000). *What we know and what we need to know about youth development programs*. Paper presented at the Society for Research on Adolescence, Chicago, IL. Paper retrieved from

Ruck, M. D., Keating, D. P., Saewyc, E. M., Earls, F., & Ben-Arieh, A. (2016). The United Nations Convention on the Rights of the Child: Its relevance for adolescents. *Journal of Research on Adolescence, 26*(1), 16–29.

Rudduck, J., & Fielding, M. (2006). Student voice and the perils of popularity. *Educational Review, 58*(2), 219–231. doi:10.1080/00131910600584207

Rudduck, J., & Flutter, J. (2000). Pupil participation and pupil perspective: 'Carving a new order of experience'. *Cambridge Journal of Education, 30*(1), 75–89.

Sarantakos, S. (2013). *Social research*. Basingstoke, UK: Palgrave Macmillan.

Saunders, M. (2011). Capturing effects of interventions, policies and programmes in the European context: A social practice perspective. *Evaluation, 17*(1), 89–102.

Sax, L. J., Astin, A. W., Korn, W. S., & Mahoney, K. M. (1999). *The American Freshman: National norms for Fall 1999*. Los Angeles, CA: Higher Education Research Institute.

Schneier, C. E., & Goktepe, J. R. (1983). Issues in emergent leadership: The contingency model of leadership, leader sex, leader behavior. *Small Groups and Social Interaction, 1*, 413–421.

Schultz, P. W., Gouveia, V. V., Cameron, L. D., Tankha, G., Schmuck, P., & Franěk, M. (2005). Values and their relationship to environmental concern and conservation behavior. *Journal of Cross-Cultural Psychology, 36*(4), 457–475.

Schusler, T. M., & Krasny, M. E. (2015). Science and democracy in youth environmental action– Learning "good" thinking. In M. P. Mueller & D. J. Tippins (Eds.), *EcoJustice, citizen science and youth activism* (pp. 363–384). Geneva, Switzerland: Springer.

Schwandt, T. A. (2014). *The SAGE dictionary of qualitative inquiry*. Los Angeles, CA: SAGE.

Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology, 10*, 221–279.

Scott, K., Bakker, C., & Quist, J. (2012). Designing change by living change. *Design Studies, 33*(3), 279–297.

Sears, A., Peck, C. L., & Herriot, L. (2014). We're here to teach about democracy not practise it. The missed potential of schools as democratic spaces. *One World in Dialogue, 3*(1). Retrieved from https://ssc.teachers.ab.ca/SiteCollectionDocuments/OneWorldInDialogue/OneWorldinDialogue_2014Vol3No1/Sears,Peck,Herriot%20Article_OneWorld%20inDialogue2014Vol3No1.pdf

Seidman, K. (2012, September 5). Student issues pushed out of spotlight during campaign; But groups take some credit for winds of change. *The Gazette*.

Shell Deutschland. (2010). *Jugend 2010*. Retrieved from https://jugend.ekir.de/Bilderintern/20100922_zusammenfassung_shellstudie2010.pdf

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–75.

Shove, E. (2003). *Changing human behaviour and lifestyle: A challenge for sustainable consumption*. Retrieved from http://www.psi.org.uk/ehb/docs/shove-changinghumanbehaviourandlifestyle-200308.pdf

Shove, E. (2010). Beyond the ABC: Climate change policy and theories of social change. *Environment and Planning A: Economy and Space, 42*(6), 1273–1285. doi:10.1068/a42282

Shove, E., & Pantzar, M. (2005). Consumers, producers and practices Understanding the invention and reinvention of Nordic walking. *Journal of Consumer Culture, 5*(1), 43–64.

Shove, E., Pantzar, M., & Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes.* London, UK: SAGE.

Shove, E., & Spurling, N. (Eds.). (2013). *Sustainable practices: Social theory and climate change.* Oxon, UK: Routledge.

Skivenes, M., & Strandbu, A. (2006). A child perspective and children's participation. *Children Youth and Environments, 16*(2), 10–27.

Smit, B. H. (2013). Young people as co-researchers: Enabling student participation in educational practice. *Professional Development in Education, 39*(4), 550–573.

Smith, D. E. (2009). Categories are not enough. *Gender & Society, 23*(1), 76–80.

Sniehotta, F. F., Presseau, J., & Araújo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review, 8*(1), 1–7.

Snyder, C., LaPointe, A. B., Jeffrey Crowson, J., & Early, S. (1998). Preferences of high-and low-hope people for self-referential input. *Cognition & Emotion, 12*(6), 807–823.

Snyder, R. (1995). Conceptualizing, measuring, and nurturing hope. *Journal of Counseling & Development, 73*(3), 355–360.

Stake, R. (1989). The case study method in social inquiry. In G. F. Madaus & D. L. Stufflebeam (Eds.), *Evaluation models* (pp. 279–286). Dordrecht, The Netherlands: Springer.

Stats NZ. (2014). *Population by age group in Auckland, New Zealand.* Retrieved from https://figure.nz/chart/3pRQhmIcVu2QCTIm-zJtRrWcCMzHVmzWD

Steg, L., & Gifford, R. (2005). Sustainable transportation and quality of life. *Journal of Transport Geography, 13*(1), 59–69.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How effective are behavior change interventions based on the theory of planned behavior? A three-level meta-analysis. *Zeitschrift für Psychologie, 224*(3), 216–233.

Stern, P. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56*(3), 407–424.

Stevenson, R. B. (2004). Constructing knowledge of educational practices from case studies. *Environmental Education Research, 10*(1), 39–51.

Stevenson, R. B. (2007). Schooling and environmental education: Contradictions in purpose and practice. *Environmental Education Research, 13*(2), 139–153.

Stieglitz, S., & Dang-Xuan, L. (2013). Emotions and information diffusion in social media—Sentiment of microblogs and sharing behavior. *Journal of Management Information Systems, 29*(4), 217–248.

Stokes, L. (1997). Short-term policy support for long-term school change: A dilemma for reform-minded practitioners. *Journal of Education Policy, 12*(5), 371–384.

Strauss, A. L. (1987). *Qualitative analysis for social scientists.* New York, NY: Cambridge University Press.

Swann, P. (2014). *Cases in public relations management: The rise of social media and activism* (2nd ed.). New York, NY: Routledge.

Taylor, C., & Robinson, C. (2009). Student voice: Theorising power and participation. *Pedagogy, Culture & Society, 17*(2), 161–175. doi:10.1080/14681360902934392

The World Bank. (2018). *What a waste 2.0: A global snapshot of solid waste management to 2050*. Retrieved from https://openknowledge.worldbank.org/handle/10986/30317.

Toffler, A. (1970). *Future shock*. New York, NY: Amereon.

Trochim, W. M. (2006). Qualitative validity. Retrieved from https://socialresearchmethods.net/kb/qualval.php

Tucci, J., Mitchell, J., & Goddard, C. (2007). *Children's fears, hopes and heroes*. Retrieved from Melbourne, Australia:

Twist, B. R. J. (2018). *Taking the complexity turn to steer carbon reduction policy: Applying practice theory, complexity theory and cultural practices to policies addressing climate change.* (Doctoral thesis), University of Edinburgh, Retrieved from https://www.era.lib.ed.ac.uk/bitstream/handle/1842/31451/Twist2018.pdf?sequence=1&isAllowed=y

Underhill, J. (2018, 16 May). Waste Management rode NZ's economic growth in 2017. *Scoop*. Retrieved from http://www.scoop.co.nz/stories/BU1805/S00511/waste-management-rode-nzs-economic-growth-in-2017.htm

UNESCO. (2016). Global action programme. Retrieved from http://en.unesco.org/gap/priority-action-areas

Ungar, S. (1994). Apples and oranges: Probing the attitude-behaviour relationship for the environment. *Canadian Review of Sociology, 31*(3), 288–304.

UNICEF. (1990). *UN Convention on the Rights of the Child.* Retrieved from https://www.unicef.org/crc/.

United States Environmental Protection Agency. (2015). Climate change and waste. Retrieved from http://www3.epa.gov/climatechange/climate-chage-waste/

Urry, J. (2015). Climate change and society. In J. Michie & C. L. Cooper (Eds.), *Why the social sciences matter* (pp. 45–59). London, UK: Palgrave Macmillan.

Vermeir, I., & Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological Economics, 64*(3), 542-553.

Vygotsky, L. (1968). *Thought and language* (A. Kozulin, Trans.). Cambridge, MA: MIT Press.

Walberg, H. J. (1990). Productive teaching and instruction: Assessing the knowledge base. *The Phi Delta Kappan, 71*(6), 470–478.

Wallach, C. A., Lambert, M. B., Copland, M., & Lowry, L. K. (2005). *Distributing leadership: Moving from high school hierarchy to shared responsibility*. Retrieved from https://files.eric.ed.gov/fulltext/ED505517.pdf

Waller, M. (2011). 'Everyone in the world can see it'—Developing pupil voice through online social networks in the primary classroom. In G. Czerniawski & W. Kidd (Eds.), *The student voice handbook: Bridging the academic/practitioner divide* (pp. 97–106). London, UK: Emerald.

Walton, J., Helferty, A., & Clarke, A. (2009). Student-led campus climate change initiatives in Canada. *International Journal of Sustainability in Higher Education, 10*(3), 287–300.

Warde, A. (2005). Consumption and theories of practice. *Journal of Consumer Culture, 5*(2), 131–153.

Warshak, R. A. (2003). Payoffs and pitfalls of listening to children. *Family Relations, 52*(4), 373–384.

WasteWise Programme. (2015). Schools' first waste audit results. In. Auckland, New Zealand: Auckland Council.

Weiler, K. (2008). Introduction. *Discourse: Studies in the Cultural Politics of Education, 29*(4), 433–437.

Wenger, E. (1998). Communities of practice: Learning, meaning and identity. *Journal of Mathematics Teacher Education, 6*(2), 185–194.

White, R. (1989). Making ends meet: Young people, work and the criminal economy. *Australian & New Zealand Journal of Criminology, 22*(3), 136–150.

Wilson, S. (1979). Explorations of the usefulness of case study evaluations. *Evaluation Quarterly, 3*(3), 446–459.

Wilson-Hill, F. (2010). *Better understanding educational outcomes connected to the New Zealand Curriculum in enviroschools.* Retrieved from http://www.enviroschools.org.nz/Section_One_Summary_of_Project.pdf

World Wildlife Foundation. (2012). *Living planet report 2012*. Retrieved from http://wwf.panda.org/knowledge_hub/all_publications/living_planet_report_timeline/lpr_2012/

Wotherspoon, T. (2014). Seeking reform of indigenous education in Canada: Democratic progress or democratic colonialism? *AlterNative, 10*(4), 323–339.

Wray-Lake, L., Flanagan, C. A., & Osgood, D. W. (2010). Examining trends in adolescent environmental attitudes, beliefs, and behaviors across three decades. *Environment and Behavior, 42*(1), 61–85.

Yin, R. K. (1984). *Case study research: Design and methods.* Beverly Hills, CA: SAGE.

Yin, R. K. (2013). Validity and generalization in future case study evaluations. *Evaluation, 19*(3), 321–332.

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: SAGE.

Young, I. M. (2011). *Justice and the politics of difference.* Princeton, NJ: Princeton University Press.

Zorn, T. (2008). Designing and conducting semi-structured interviews for research. *Waikato Management School.* Retrieved from http://home.utah.edu/~u0326119/Comm4170-01/resources/Interviewguidelines.pdf