

# DEVELOPING AWARENESS OF ENVIRONMENTAL SUSTAINABILITY IN GRADE 6 BOYS THROUGH PROJECT-BASED LEARNING

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## Abstract

During the third term of 2015, twenty-five 11–12-year-old boys from St Benedict's Preparatory School participated in two main projects, which aimed to develop awareness of the need for environmental sustainability. The focus of the projects was to re-introduce owls into the community in an attempt to assist with vermin problems, and to create a vegetable garden to feed the St Benedict's community. The boys were fully involved in these practical projects to encourage them to adopt healthier lifestyles and to be more self-sustaining, both in their individual lifestyles and in their contribution to the community. The data collected were qualitative and revealed how the boys developed an understanding of the way ecosystems are being destroyed due to urbanisation. This new understanding allowed the boys to make mature lifestyle changes to the way they interact with wildlife, and in the choices they make about personal food sources and the systems that produce them. The data collected showed how the boys collaborated, and how shared knowledge can create a new platform of awareness within the community.

## Introduction

Having worked at St Benedict's Preparatory for the last nine years, it has become evident to me that a tactile learning programme often encourages more engagement and commitment from the boys. They thrive on being challenged to *do* through project-based learning, rather than merely learning the theory behind the lesson. Boys prefer to take more responsibility for their learning when they are given the freedom to explore their topic. When the topic of global citizenship was presented to us, it seemed an ideal link to the overall objective of St Benedict's Preparatory, which is, amongst other things, to create independent thinkers and resourceful, environmentally-conscientious students. Through raising awareness of environmental issues such as pollution and global warming, I hoped to encourage the boys to develop as global citizens and future leaders for environmental sustainability.

My mentor had introduced the *Habits of Mind Programme* (Costa & Kallick, 2008) to the school. I took many personal lessons from the book *Learning and Leading with Habits of Mind*:

*16 Essential Characteristics for Success*. This programme exposed the boys to the 16 habits one needs to become a successful global citizen. Examples of the steps that are relevant to the topic are *Thinking Flexibly*, *Applying Existing Knowledge to New Situations*, *Thinking Interdependently* and *Listening with Understanding and Empathy*. My chosen topic required the application of some of these attitudes in order to achieve a successful outcome and a cognitive shift in the boys.

Each boy, with great enthusiasm, took to the practical approach of caring for the vegetable garden and rearing the owls. Dedication to the projects saw boys develop some of these constructive habits, but also led to an eagerness to share their experiences and learning with their peers and families.

Through project-based learning and using Habits of Mind, the boys did develop the necessary skills for this journey to be a successful one.

## **Literature Review**

According to Reimers (2013), an intellectual movement that developed in the 17<sup>th</sup> and 18<sup>th</sup> century revealed that, to improve society, education could promote the use of science to understand the natural world and the place of humans in their world. This is equally true today – through education we need to prepare students to improve the world and reduce human suffering. The many areas in need of attention include income equality and social exclusion, poverty, hunger, health, conflict and environmental sustainability. Reimers highlights the need for us to focus on the above-mentioned challenges in order to advance human well-being and ensure global stability.

Kandel (in Reimers, 2013, p.59) defines international understanding as:

That attitude that recognises the possibilities of service of our own nation and other nations in a common cause, the cause of humanity, the readiness to realise that other nations along with our own have by virtue of their common humanity the ability to contribute something of worth to the progress of civilization.” In addition, immersing students in a cultural setting different to their own exposes them to people of different cultural backgrounds which develops cross-cultural understanding (Reimers, 2013).

Riordan and Klein (2010) describe environmental education pedagogy as, a “creative and dynamic process in which pupils and teachers are engaged together in a search for solutions to environmental problems” (p.120). They indicate that this pedagogical approach to environmental education differs from a traditional teaching approach by way of interdisciplinary planning, active investigation of local issues and robust participation in activities involving environmental improvement. Boys should be encouraged by their teachers

to solve real-world problems by being actively involved in an environmental education curriculum. Riordan and Klein also note that real-world problems should be of relevance to the communities in which they live. Inquiry work with children has been researched and reveals that they are able to construct their own meaning. It has created curiosity which, according to Riordan and Klein, is a key element to engaging boys.

Due to ongoing industrialisation and associated demographic change, our urban environment has been affected, making our cities some of the unhealthiest places to live. The population in overcrowded urban areas is changing the environment through consumption of food, energy, water and land, thus decreasing the quality of life (Torrey, 2004). I wanted to achieve a positive change in the urban environment that we occupy, by getting the boys to experiment with an urban vegetable garden and an owl introduction programme.

I felt it was vital that the boys be taught the importance of sustainability through community gardens. Some of the benefits of community gardens include a healthier lifestyle, reduction in air pollution and a reduction in affordability constraints (Sarich, 2013). Research shows that vegetable consumption is higher than that of fruit consumption, for many reasons, including the fact that vegetables are cheaper and easier to grow, and growing them takes up less space (Bellows, Brown & Smith, 2003). Positive health effects for young people have been significant with the introduction of urbanised gardens. Social interaction, mental stimulation, and exercise are many of the other benefits of the introduction of urbanised gardens in schools (Bellows, Brown & Smith, 2003). Some of the effects an urbanised garden has on the ecosystem are a reduction in soil erosion, filtering of rainwater (which helps to keep lakes, rivers, and groundwater clean) and restoring oxygen to the air as well as reducing air pollution through the gaseous exchange systems of leaves and soils (Footprint, 2012).

Barn owls (*Tyto Alba*) are known predators that many farmers use on their property, in the hope of keeping the rodent numbers low. In selecting nesting sites, the barn owl is particularly adaptable. They may nest in hollows of trees, cliffs, owl boxes and other human-made structures such as buildings. Barn owls defend only a small area in the direct vicinity of their nests during the breeding season, therefore rarely migrate. Barn owls are effective hunters and prey upon a variety of small mammals, such as rodents, that make up the majority of their diet (Tillmann, 2012). Each barn owl adult can catch an average of six to ten rats per night for feeding their young, depending on the number of owlets in the nest. A pair of barn owls along with their young ones are capable of consuming 3 000 mice per year. This can assist in keeping a burgeoning rodent population in check, balancing the ecosystem in a non-toxic and ecologically friendly way. To further maintain a healthy environment, the community can

come to rely less on using chemical-based toxins to kill the rodents. These toxins are harmful to our children, and to the community (Mungoshi, 2012). In addition, there are many benefits that come with the responsibility of caring for animals such as the owls in this project. It was anticipated that the boys might learn kindness, empathy, and patience. They might also learn responsibility, consistency, and perseverance, all of which are important life skills (Williams, 2010).

According to Reichert and Hawley (2010), boys are relational learners. The partnership of an educator and learner is based on being open and trusting. Reichart and Hawley's study, with a group of boys ranging from 12 - 19 years of age across a wide range of ethnic and economic diversity, revealed that patience, commitment, and a tactile approach contributed positively to boys' learning. I applied this method to my own teaching and hoped to motivate and inspire the boys, by feeding the owls and growing the vegetable garden, to embrace the positive changes they can create today, and in their future.

In closing, Reichert and Hawley's comment that, "teaching boys effectively is like a dance: While someone leads and another follows, the process is a partnership united in common purpose" (2009/2010, p.38), has inspired me as an educator to become a positive catalyst in assisting boys to become global citizens, leaders in their community, and future pioneers in sustainability.

Through the methodology of action research, I hoped not only to facilitate the learning process for the boys I teach, but also to witness them enhance their responsibility such that they are able to control their own learning outcomes and invent their own concepts for the project.

## **Research Context**

St Benedict's Preparatory School caters for boys from Grade 4 to 7, and operates on a four-class structure per grade, where the maximum class size is 25. The Preparatory School creates a place of learning, challenging engagement, and personal growth in an environment that is nurturing and vibrant. It fosters a healthy balance between academics, sporting, and cultural activities with strong inter-personal bonds and Christian values underpinning all it does. To summarise the school's vision and mission accurately, "The Preparatory aims to promote the spiritual, emotional, intellectual, social and creative development of each boy."

The project was introduced to all Grade 6 boys at St Benedict's by showing them a presentation on the IBSC Action Research process, and explaining the nature of the projects we would be implementing. The chosen age group for the practical study was 11-12-year-old boys. This age seemed most suitable as they are at a stage where they are beginning to show leadership skills

and can be responsible, and they are also able to grasp the long-term consequences of the lessons and the lifestyle changes they are learning.

Boys were offered the opportunity to be involved, and if they volunteered to be part of the project, they then received a permission letter for their parents' signature. The parents completed the letter and agreed to the various terms that would be covered in the data collection process. Parents and boys were also assured of their anonymity in the reporting process as no real names were to be used. I planned to work with 20 Grade 6 boys so that the projects could be split into two main groups. I initially received 24 replies from parents, but later this grew to 25 due to the interest created by the projects. This group of boys allowed for rich and accurate data collection as each one brought different personalities, perceptions, and values to the overall process.

## **The Action**

During the first week of the project, two lessons were given to the boys. The first lesson was spent identifying their existing knowledge on the research topic. This informed a basic platform for me to work from as the facilitator. The second lesson was spent educating the boys on urbanisation, habitat fragmentation, ecological edge effect and basic environmental studies. Week Two's activities moved beyond the classroom and encouraged a more hands-on approach in the preparation of our vegetable garden and owl enclosure. This created much excitement for the boys, as it was different from their usual learning environment and lesson methodology. Preparations included the turning of the soil for our vegetable garden and learning how best to make the soil optimal for our produce. The owl house was also carefully prepared for the impending arrival of the barn owls, and further information was provided through a service partner (Eco-Solutions), on how best to manage the upkeep of the owls.

Week Three saw the planting of the produce and the arrival of the barn owls. Watering and feeding schedules were initiated, for which the participants were expected to take full responsibility, whilst I merely observed and facilitated. Weeks Four and Five were spent carefully maintaining the garden and raising the owls in their enclosed environment. This stage of the project revealed the commitment and dedication of most of the boys; while two boys lost interest in the garden maintenance and their interest shifted to caring for the owls.

The last stretch of the project, Weeks Six and Seven, involved the harvesting of the produce and the careful adaptation of the owls to their outside environment. This step proved to be very rewarding for the boys. The delivery of project-grown produce to a grateful school support staff revealed the positive impact such a community programme can have. When the owls were

successfully released into the community, this also proved to be a bittersweet, but rewarding event. In the final week of the project, one-on-one interviews and focus group interviews with the participants were held to conclude data collection. Through the various stages of the project, the participants made additions to improve the project and whenever a problem arose, they looked at the problem as a group and solved it interdependently and flexibly. Many future ideas from the boys were identified, in order to enhance the outcome of the results for future projects.

## **Data Collection**

### ***Questionnaires***

During our scheduled extra-curricular classes, boys were asked to complete several online questionnaires, using *Google Forms*. Questions were open-ended, allowing the boys the opportunity to explain their answers. They completed a pre-questionnaire to gauge their topic knowledge, then completed a post-questionnaire to evaluate a sense of their thoughts and feelings around the projects and results.

### ***Focus group discussions***

Every second week a sample group of boys was consulted on the project and relevant topics relating to the project. During these discussions, new themes emerged, and time was spent unpacking these themes to see if any avenues could be explored at a later stage.

### ***Observation***

Through every stage of the project, I observed the boys' behaviour and interactions, not only with each other, but with the owls too. The early stages of the project saw the boys being methodical and focussed on following all the steps to complete the feeding schedule and preparation of the garden. Boys grew in confidence through each stage and made adaptations to suit their group.

### ***One-on-one interviews***

During the one-on-one interviews, boys spoke about their experiences through the various stages of the project. They had the opportunity to talk about variations that could help bring awareness to not only a small group within the community, but that could help create a wider awareness about the need to be healthy and to protect our wildlife within urban areas.

## **Data Analysis**

According to Ernest Stringer (2014), data analysis is “the process of crystallizing information into a category system which provides the basis for increased understanding of the complex

events and interactions comprising everyday events in classrooms, schools, and other educational settings”(p. 118). The data analysis process in my project proceeded as follows: after the one-on-one interviews and focus group discussions, the data were typed out as transcripts. Once all the transcripts had been typed and printed, I read through all the questionnaire responses and transcripts, highlighting any recurring themes. On reading through the responses and transcripts a second time, common threads were highlighted and collated for a better understanding of project results and findings. The themes that emerged were analysed to ensure the initial research question would be answered.

## **Discussion of Results**

### *The development of awareness of the need for environmental sustainability*

This theme showed how the boys became more aware of the problem, and how they went on to find other ways of raising awareness of the need for environmental sustainability in the community.

Through the early stages of the project, it became clear that the boys had never fully understood the impact we as humans have had on the earth and her beauty. At our very first group meeting, when we discussed our plans and projects, it was evident that there was an ignorant mindset regarding the problems we face and the impact we have on the ecosystem. Two-thirds of the boys showed only basic knowledge of why the ecosystem is important, but under tremendous threat due to urbanisation. This was evident when Boy N commented, “Urbanisation means making things more modern and developed.” Four of the 25 boys showed an increase in awareness after two weeks, where Boy A and Boy N expressed real concern as to how past generations had no thought to protect wildlife and the destruction of their habitats. The boys were asked the question, “What are some of the dominant effects of increasing habitat loss?” in a group discussion. Boy B commented that “the dominant effects ... is the loss of natural areas and loss of many types of undiscovered biodiversity due to deforestation, pollution, exploitation of natural habitats and urbanisation.”

After a few lessons on habitat fragmentation, it became clear to Boy C and Boy N that a real change needs to be made in how we approach setting up new malls, homes, and offices. These boys expressed concern around the overall break in the food chain system due to urbanisation and the growth of human population. Eighteen out of the 25 participants explained how often they take food for granted. Boy F accepted and owned up in a group discussion that he took for granted where food came from, as he always knew where to get it at home. Boy F is now

growing his family a sustainable source of vegetables and herbs, which demonstrates a long-term shift in attitude, explained further on in this report.

Cognitive flexibility is defined as “the human ability to adapt the cognitive processing strategies to face new and unexpected conditions in the environment” (Cañas, Quesada, Antolí and Fajardo, 2003). Such flexibility was evident when 15 out of the 25 participants had an ‘aha’ moment and realised what an impact they could have on the community and the surrounding ecosystem as they developed the plans for their projects. They came up with other ways of raising awareness, for example when boys B, E, G, and H took it upon themselves to create an OPU (Owl Protection Unit) group. This group spent their breaks looking after the owls and keeping boys away who wanted to disturb the birds in their enclosure. These boys also created posters and put them around the enclosure, to help share the knowledge of how important the wildlife was to the community. Boys G, H and J requested an opportunity for all the participants to take the remainder of the school past the garden and the owls to explain the importance of the program and what they wanted to achieve out of it. This mini project was successful and these boys set up a roster where each class was taken to see the owls and garden. Teachers complimented the boys’ enthusiasm and commitment to the program.

### ***The development of listening skills and empathy***

This section really took me by surprise and made me realise just how important this program was to the boys. All 25 participants met with our auxiliary staff one afternoon and listened to them explain how they meet their daily basic food requirements. Fourteen boys showed empathy and felt inspired to help the auxiliary staff. The boys also showed a newfound respect for the ecosystem and wildlife, and realised just how important it is to care for these animals that keep the food chains intact. When I asked a focus group of four boys their thoughts after meeting with the staff, Boy C commented, “I never realised how hard it was for some families out there,” while Boy E commented, “We have it so easy in our homes.”

Five of the boys used every opportunity to teach new people about how to be responsible for the environment, and how to protect wildlife through peer-to-peer discussions and exercises in our Enviro-Club. Boy D showed his leadership skills in the club by helping fellow Grade 7 boys share their knowledge with the Grade 5 and 6 boys in the club. Boy D led by example and showed the other boys how to complete tasks and how to harvest produce. Boy D showed enthusiasm daily as he was always asking to run new small interest projects to educate the Prep boys.

Through these interactions, empathy was created across all the grades. Together with the impact of empathy created, these changes also contributed towards the long-term shift in attitude. Teachers used this to help teach the boys in different grades about the program and created themes of work around the owls and how we can assist them.

### ***The development of long-term behavioural, attitudinal and maturity changes***

A further trend identified a long-term shift in attitude towards the need to protect biodiversity in our communities. Six boys now wanted to make the change in their environment, outside of this project. Boy B became a leader of the wildlife section of the project, as he felt it was extremely important to be better ambassadors for the owls who can't speak for themselves. Boy B helped create the OPU group, and this group shared information with the school at an assembly. Boys C and N went on to look into other small re-introduction programs for urban areas, which will be rolled out in the coming years at St Benedict's through the Enviro-Club.

Boy F is now growing a sustainable vegetable and herb garden for his family. Boys D and G created new home-based projects where they had owl boxes installed, as they have spotted eagle owls in the area. Boys I and L started an initiative to work with some of the surrounding retirement homes to grow their own gardens in the hope of increasing sustainability. These boys are in the process of setting up the finer details and helping create the perfect garden for the residents to maintain.

A personal observation was made throughout the project regarding the boys' maturity and time management. Participants ranged from well-organised boys, to boys who needed constant reminding to do tasks. By December, most of the boys' behaviour had improved, and they demonstrated a better understanding of how to approach new tasks. Most importantly, there was a noticeable growth in their maturity as these boys are now helping make a difference around the school with several small termly projects. I could see the growth in boy's maturity through the small comments they made and how they kept up with their daily schedule. Boys were following to-do lists and checklists to make sure their daily chores were completed. In an interview with Boy F, he revealed how it had become the norm for him to follow his schedule on his phone through his calendar. Boy F went on to tell me how he felt less reliant on his parents to remind him to do his daily tasks and he needed less reminding about homework needing to be done. Boy F commented, "I use my Google calendar to remind me of tasks, the calendar also sends me notifications so I don't miss something." He has applied this to his personal schedule and his school schedule.

### *The development of collaborative skills*

This was an unforeseen development and an exciting benefit for the participants in the project. According to Dillenbourg (1999), collaboration is more likely to occur in groups of people of similar status and of knowledge levels. This was very interesting to me, as at the outset of the project, five of the boys had grand ideas of their own, which they didn't want to share with other boys. Boy I was adamant that he would carry out his own part of the project without help from a partner. Boy I preferred to work on the wildlife project only and didn't commit fully to the garden project. However, as the project progressed, the boys opened up to each other and shared not only ideas for the planning, but also how to make a schedule to maintain the garden and protect the owls. Boy I had a remarkable change of heart and started participating in group sessions and socialising with boys he had never interacted with before. Boy I also started contributing to the garden project as he had previous knowledge of home gardens and how to prepare them, and went on to become a team leader for the garden project. Boys found it rewarding to have their thoughts heard and recognised by their peers - this was evident when Boy I shared his personal experience of growing vegetable patches at home.

The boys also then found it easier to rely on each other when a problem arose. Boy N, who was an active sports player for the school, did his best to commit to both the program and his sport. He made a plan when he was busy, and informed the other participants of his whereabouts and committed to helping in other areas. The garden participants found it fun to work in groups, as this allowed them to share responsibilities and ideas on how they intended to care for the garden. I noted how two weeks before the school closed for holidays, they were working out who was going on holiday and who was staying at home and would be able to check on the garden. It was at this point that I suggested they draw up a roster which guided the boys in committing to helping once a week during the holiday. The boys then adapted the roster together and met twice a week to ensure the garden was always maintained. Boy K was an avid gardener before the project and had many small patches at home where he grew his own food. The other participants always trusted his judgement and therefore appointed him as their leader. The greatest benefit of this collaboration was how the boys came up with many new ideas and projects to improve the situation and share knowledge about the ecosystem.

The development of collaboration was not what this project intended to evaluate. However, it certainly proved beneficial to do so. This is a beautiful addition to the project, and a very important life skill to have developed.

## Conclusion

To conclude, I feel the boys developed a real awareness about urbanisation and its impact on the surrounding ecosystems. They not only learnt how to adapt their daily lifestyles to appreciate the wildlife and ecosystem surrounding them, but also learnt to think twice before putting down that carbon footprint. Overall the most important finding was the boys' growth in responsibility. Boy D felt it was his responsibility to share, care and maintain as many aspects of the environment as he could. Boy D commented, "Through this project, I have made it my goal to become a leader within my school, a leader for the environment and it is my goal to lead by example. I will be doing my best to live off the produce I grow at home, as we can't keep relying on shops for basic produce." I also felt a revelation was made when Boy G felt it was his responsibility to protect the wildlife we have in our ecosystem, as he felt the food chains within urban areas were out of sync. Boy G commented, "I want to help start and maintain introduction programs of many different animals within our community. It is because of us, that wildlife has had to adapt to survive in urban areas, or they leave the area, which creates an imbalance in the system. I wish to be the voice for as many animals as possible and hope many small projects make a big difference." This boy's small comment demonstrates that he can make a big difference, and it is clear that a global citizen is in the making.

From just looking at the boys' comments and their passion towards making a difference after an eight-week period, it is apparent that awareness can be developed and nurtured through practical project-based learning. This process allowed the boys to take control of their work and thus the outcome.

There were three boys who felt they didn't gain any further knowledge or awareness through the project. These boys were happy to participate in the weekly schedule and provide their honest comments when participating in interviews. Boy K and Boy R informed me from the start that they were only participating because their parents wanted them to participate in an after school activity other than sport, and the idea of working with owls was "cool." Boy K even commented, "I don't want to help with the garden project; I want to only help with the owls. This project is easier and takes less time." What was most rewarding after the owl release in Week seven, was that Boy K had a slight shift in empathy. He felt his little bit helped the owls feel prepared to make a difference in the community. However, when I asked Boy K at the end of the release in our final interview, "Do you see yourself helping with other introduction programmes in the future?" he commented honestly, "I don't think so."

All in all, I was moved and rejuvenated at the overwhelming commitment and passion the boys showed towards the project, and I am confident in the knowledge that each one of them has

nurtured their own memories from this experience, which will help mould them into the ideal global citizens of the future.

## **Implications for Future Practice**

After reflecting suitably on the project, I will be making improvements to the timeline and implementation of the various mini projects. I am confident that through these projects many other boys from various grades can benefit. Adjustments made in the classroom have not only benefited me, but the boys I teach. I am uncertain if every boy who participated will continue to raise awareness, but I hope that through their discoveries and projects, new boys will be exposed and become enthusiastic about making a difference and living a healthier lifestyle.

## **Reflection Statement**

The IBSC Action Research Program has been a roller coaster journey of learning, facilitating and emotions for me. At the start of the program, I felt uncertain and confused as to the program's expectations. As I reflect back at the end of the program I feel enriched and know that every obstacle we faced was overcome through hard work and passion. This entire experience has been rewarding and has provided numerous opportunities to share my findings and my Action Research experience. A big thank-you goes out to Colleen Kennedy at St David's Marist Inanda for the opportunity to present at the National IBSC Conference, where we got to not only create awareness about action research, but also to see how our projects are already making a difference, even though the paperwork isn't complete. My year presented many new challenges and experiences while completing my action research project. I initiated a full extra-curricular Enviro Club at school, where boys from different grades run mini projects to create awareness and bring about change within our school and community.

Words are insufficient to express my gratitude to my mentor and Headmaster, Mr Simon Curtis. Mr Curtis has been supportive and kept me on track to meet every deadline. I appreciate all the guidance and feel confident to mentor future action researchers from our school through projects of their own.

The action research process has helped me enjoy and redefine my teaching practice. The process has opened my eyes and mind as to how effective collaborative learning can be, and how boys love to share their thoughts and ideas with each other through engaging topics.

I have had the opportunity to work with the best global team, where we have shared and given critical advice on each other's projects. The Skype sessions and email chats helped create the final product for which I am grateful.

I also want to thank the boys' parents as they bought into the process and encouraged their sons throughout the project.

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## References

- What Is Cognitive Flexibility? (n.d.). Retrieved March 22, 2016, from <http://mentalhealthdaily.com/2015/07/24/what-is-cognitive-flexibility/>
- Sarich, C. (2013). *Popular Resistance*. Retrieved 20 September, 2015, from <https://www.popularresistance.org/hidden-benefits-of-community-gardens/>
- Mungoshi, R. (2012). *Joburg.org.za*. Retrieved 20 September, 2015, from [http://www.joburg.org.za/index.php?option=com\\_content&view=article&id=7846:owls-take-flight-in-alex&catid=135:alexandra&Itemid=192](http://www.joburg.org.za/index.php?option=com_content&view=article&id=7846:owls-take-flight-in-alex&catid=135:alexandra&Itemid=192)
- Reichert, M & Hawley, R. (2010). Reaching Boys. *An International Study of Effective Teaching Practices*, 91(4), 35-40. <https://docs.google.com/viewer?a=v&pid=sites&srcid=c3Rqb2huc2Nob29sLmNvLnphfGdvaW5nLWdsb2JhbC1pYnNjLTIwMTUzMjAxNnxneDplMjAxNTA3ODQwMDgyMzI>
- Reimers, F. (2013). Education for Improvement. *Citizenship in the Global Public Sphere*, 1(1), 56-61. [https://drive.google.com/drive/u/1/folders/0B2y9S3kdEbUXfmc4blpGeFRGS3FTR1lhVVFf\\_bj10b2NORmxhTUM0eG9rM0o4Njk4cU9VSG8](https://drive.google.com/drive/u/1/folders/0B2y9S3kdEbUXfmc4blpGeFRGS3FTR1lhVVFf_bj10b2NORmxhTUM0eG9rM0o4Njk4cU9VSG8)
- Torrey, B. (2004). Urbanization. *An Environmental Force to Be Reckoned With*, 1(1), 1-8. <http://www.prb.org/Publications/Articles/2004/UrbanizationAnEnvironmentalForcetoBeReckonedWith.aspx>
- Riordan, M & Klein, E. (2010). Environmental Education in Action. *How Expeditionary Learning Schools Support Classroom Teachers in Tackling Issues of Sustainability*, 1(1), 119-137. <http://www.montclair.edu/profilepages/media/1411/user/riordan%26klein.pdf>
- Williams, J. (2010, 09 February). *Pets Can Teach Children Valuable Life Skills*. [Weblog]. Retrieved 20 September 2015, from <http://www.canidae.com/blog/2010/02/pets-can-teach-children-valuable-life-skills.html>
- Bellows, C, Brown, K & Smit, J. (2003). Health Benefits for Urban Agriculture. *Urban Agriculture*, 1(1), 1-8.

[http://www.co.fresno.ca.us/uploadedFiles/Departments/Behavioral\\_Health/MHSA/Health%20Benefits%20of%20Urban%20Agriculture%20\(1-8\).pdf](http://www.co.fresno.ca.us/uploadedFiles/Departments/Behavioral_Health/MHSA/Health%20Benefits%20of%20Urban%20Agriculture%20(1-8).pdf)

Tillmann, H. (2012). Potential for Barn Owl as Rodent Biological Control in Central California Vineyards. *No title*, 1(1), 1-20.

<http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1018&context=biosp>

Footprint, C. (2012). *Gardeningmatters.org*. Retrieved 20 September, 2015, from

[http://www.gardeningmatters.org/sites/default/files/Multiple\\_Benefits\\_2012.pdf](http://www.gardeningmatters.org/sites/default/files/Multiple_Benefits_2012.pdf)

Costa, A.L. & Kallick, B. (2008). *Learning and Leading with Habits of Mind: 16 Essential Characteristics for Success*. United States of America: ASCD.