

SCHOOL GARDENS PILOT PROJECT REPORT

ONE SEED FORWARD

AND

UNIVERSITY OF
ABERDEEN



OSF SCHOOL GARDENS PILOT PROJECT REPORT

CONTENTS

INTRODUCTION

- i. FROM OIL TO SOIL
- ii. AIMS
- iii. METHODOLOGY

PART 1: CREATING A GROWING SPACE

- i. GETTING THE RESOURCES IN PLACE
- ii. BUILDING THE GARDENS
 - a. Surveying
 - b. Clearing the ground
 - c. Construction
- iii. BUILDING RELATIONSHIPS WITH COMMUNITIES
- iv. KEEPING PROFILE HIGH
- v. PROJECT COSTS

PART 2: SUPPORTING LEARNING

- i. PUPILS' ENGAGEMENT
- ii. TEACHER LEARNING
- iii. SCHOOL WIDE INVOLVEMENT

KEY ACHIEVEMENTS

RECOMMENDATIONS

INTRODUCTION

From Oil to Soil

We can consider the city of Aberdeen, as for many cities throughout the world, to be in a period of transition. Transitions are considered as societal processes of fundamental change in culture, structure and practices (Frantzeskaki and de Haan, 2009), although perhaps this is particularly evident in Aberdeen as there is a need to move from a local economy which has been largely dependent on the oil and gas industries over the past forty years or so, into a new, unfolding economic structure resulting from a post-oil scenario. Within this transition urban greening is a widespread phenomenon and, within that, school gardens are witnessing a resurgence. While school gardens are not new, they have been given added importance as a result of changing economic scenarios and the increasing research evidence around the benefits of gardens for health and well-being, as well as for learning.

School gardens also promise to make a significant contribution to government policy areas. In the Scottish context we have a curriculum which places a great deal of emphasis on outdoor learning and health and well-being, as well as the General Teaching Council standards for teacher registration having sustainability as a core value. In addition to curriculum and standards Scottish Government has introduced the National Improvement Framework, one aspect of which is to close the poverty-related attainment gap. A recent study by the National Foundation for Educational Research, which looked at the impact of school gardens on learning, suggests that school gardens may have a significant role in helping to close that attainment gap. The NFER examined the school gardens campaign taken forward by the Royal Horticultural Society, involving over 11,000 schools. Their conclusions were that school gardening provided evidence for;

- Greater scientific knowledge and understanding.
- Enhanced literacy and numeracy, including the use of a wider vocabulary and greater oracy skills.
- Increased awareness of the seasons and understanding of food production.
- Increased confidence, resilience and self-esteem.
- Development of physical skills, including fine motor skills.
- Development of a sense of responsibility.
- A positive attitude to healthy food choices.
- Positive behaviour.
- Improvements in emotional well-being.

It is with this background in mind that the pilot project undertaken in collaboration between One Seed Forward and the University of Aberdeen's School of Education, was taken forward with funding from Aberdeen City Council's community food growing fund. Aberdeen has in recent years been thought of as a wealthy city, associated with oil and gas developments. However, there are a number of areas within the city that score amongst the lowest on the Scottish Index of Multiple Deprivation and the three schools selected for this pilot are all located in the lowest decile for education and in the second lowest decile in Scotland overall. The development of the pilot school gardens project was, then, thought of as a possible transition project, from oil to soil, which might offer some potential benefits to the children and the communities around the schools. As this report will illustrate, the gardens do, indeed offer potential for addressing a number of areas relating

to health and well-being, community engagement as well as children's learning. However, it is important to acknowledge that considerable development is and will be needed to embed and upscale such an initiative within the local authority. It is a developmental process for the schools, for the teachers, for the pupils and for the community. Such development and transition requires considerable collaboration and coordination.

AIMS

This particular project was to create an Aberdeen School Garden Programme which aimed to involve schools in Aberdeen to be active participants in creating a physical garden space in their school that could be used to educate children in the benefits of growing their own food.

This was a hands-on project for schoolchildren to engage with the earth and understand how food grows. The project involved three schools in regeneration areas of the city, one in each nominated area. The chosen schools were:

- Bramble Brae primary school
- Woodside primary school
- Tullos primary school

An aim of the project was also to create an educational programme and materials from these pilot schools that could be rolled out to other schools in the area.

More specific objectives

- Creation of, or improvement to, a space in the school that can be used as a vegetable garden.
- A developed school educational programme that includes local vegetable growing, health and nutrition benefits, recycling and composting, links to literacy, numeracy, citizenship, science and arts.
- Developing links from garden projects to raise awareness of climate change and climate actions and sustainability.

METHODOLOGY

At the outset it was important to be clear about the purpose and scope of the pilot project. Therefore it was necessary, following the submission of the project proposal, to have meetings with the council officers involved. As a result of these meetings there were some changes to expectations with respect to the number of schools involved, which impacted to some degree on the implementation of the project. Instead of focussing on two schools as originally suggested in the proposal, we were asked to increase this to three schools, one from each of the regeneration areas identified: Northfield, Torry and Woodside. Following site visits and discussions with head teachers of various schools that had expressed an interest, three schools were selected for the pilot: Bramble Brae, Tullos and Woodside.

Following selection of the schools further meetings with the headteachers of those schools were arranged to discuss the project in more detail and to identify the classes and teachers who would participate. Again, as a result of these meetings, the anticipated number of classes increased from

the original two envisaged to five in total, one from Bramble Brae and two each from Woodside and Tullos.

Meetings were organised with the teachers to discuss the pilot project, their expectations, the initial calendar of activities and the initial timetable of visits to the schools. Ongoing communication took place with the teachers via email and in face-to-face meetings during the school visits. A further group meeting of the teachers took place in the second week of January 2018.

In addition to the initial meetings with the council headteachers and teachers, there were regular internal team meetings to keep track of progress of the project and to adjust plans accordingly. The regular meetings were supported through ongoing email and telephone communication. A Dropbox file was created, to which all the team members had access, to regularly deposit and update materials used in the project. In addition a secure space on the University server was created to back-up these materials, to store the many photographs that were taken and the additional information obtained from the pupils and teachers through the questionnaires and interviews.

Following the initial discussion with the teachers, the team developed some survey type activities to be used by the pupils in the classes. Using these the team undertook a preliminary site visit at each of the schools, along with the children in the participating classes. This initial survey of the school grounds, or existing garden space as in the case of Tullos, helped to engage the children from the beginning and contributed to the decisions around siting and design of the gardens.

Using information from the site visits, the feedback from the children and the number of children in the classes, Bob Donald was able to assess the amount of materials required to begin the construction of the gardens. In the case of Tullos, which already had a garden that had been disused and allowed to become overgrown over the past few years, a different strategy was required to enable the clearing of the ground and construction of additional planters. This is explained in Part 1 below.

As the project developed the team undertook observational visits to document the types of activities that the teachers undertook with their classes in relation to the garden, although in the early stages most of the classroom based activities were produced or suggested by the University team. These were refined following experiences in the classrooms and have gone towards producing the learning and teaching programme.

As the gardens were gradually put in place children were kept informed about the progress and included as far as possible. In preparation for the planting out in the garden the pupils were introduced to important information and concepts with respect to the garden, such as soil, composting and germination, these activities taking place in the classroom over the winter months. During this time pupils also researched types of vegetables that it is possible to grow in Scotland and prepared their suggestions for the garden.

As soon as the gardens were constructed and the weather improved, the children were involved in planting out the seeds, or the seedlings that had been started at Grove nursery, explained in part 1.

The process of children's engagement in all the activities of the garden from preparation to planting and harvesting was documented. These processes and the progress of the gardens were

also communicated to the wider community using social media such as Facebook and Twitter, the local press and the local community radio.

A number of stages in the setting up of the gardens required engagement with external groups and making links with the community.

PART 1: CREATING A GROWING SPACE

i. GETTING THE RESOURCES IN PLACE

Having decided on the schools that were going to take part in the pilot, the first step was to talk directly with the head teachers about which teachers and classes were going to be in the pilot project. There was a feeling in Tullos and Woodside that there would be benefit in having two classes taking part rather than one. From a pilot research perspective, this would give us a greater breadth of information and experience, but it did mean that we would extend the amount of time on the project by the team by an additional 66% before we met with the pupils.

We held an initial meeting with interested parties in the Council, including community officers, parks department and environmental services. At this meeting it was agreed that we would get support from groups and that the Council would undertake to build the gardens once the final plans had been presented to them. Bob Donald had a subsequent meeting with Stephen Shaw who offered access to his team to assist in the project. Bob also had further meetings with Stephen Bly and the assistance from all these people would prove to be invaluable to the project.

When the garden plans were presented to the Council we were advised that the amount of money we had allocated to their construction was insufficient due to the need to outsource it to third parties given a lack of internal resources. Bob then looked at alternative means for delivering the gardens as per the pilot.

From the outset we were talking to Neil Woodward of the Community Growing Fund to see what resources he could offer. Neil had been in talks with EIS Waste Management about getting recycled materials that could be used for the gardens. Bob met with EIS and there was a great amount of support from them on the materials that they could give us for free. They also offered to deliver wood for free to us as well, but we first had to find somewhere where it could be held until we were ready for construction.

Through Stephen Shaw, Bob met with Mike Chalmers at Grove Nursery and Mike agreed that an area could be set aside for the holding of materials. Mike was a great help to the project with further assistance as we will detail later on.

Unfortunately some of the materials that had been set aside at EIS for us over the Christmas period were wood chipped by mistake so there was a delay in getting new materials. When they did arrive, there was a wide range of wooden planks and crates that we then started allocating to the

gardens. Bob managed to get some volunteers through the One Seed Forward project to tidy up the materials – removing nails, sawing materials to the required sizes, sorting materials and so on.

CFINE offered to take the volunteers under their Public Liability Insurance cover which was a great help as this is expensive for voluntary groups. They also provided labour and transport to take the materials from Grove to the school sites.

On the education side, the team met with the teachers and the pupils and started to gather materials. There was an issue at the start of the project as the teachers thought we would be providing all the materials for them. This did take a bit of time to resolve and the project team helped out more than we had anticipated, but as the project progressed the teachers took more of a lead role.

ii. BUILDING THE GARDENS

As with many of the processes involved in the development of the gardens it was possible to involve the children in the classes, as well as the wider community.

One of the first steps in building the gardens was to be clear about what space was available and any gardens that may already be in existence. The children were involved in surveying and suggesting the site for the garden (see the learning activities in part 2).

Once it was clear what space was available, and any pre-existing gardens that were already in place were evaluated, the next steps in the process needed to be planned.



Clearing the ground

Tullos Primary had an existing garden space but it had been unused for over 4 years. We posted requests for assistance on Facebook and asked the community to come and help to clear the garden of weeds, rocks etc. Stephen Bly and Bob Donald removed a lot of overgrown trees and bushes to open up light into the space over the course of two mornings, and then on the weekend we had 15 local volunteers who cleared a lot of weeds from paths and existing planters and dug up some of the ground to allow planting to take place.

Overgrown Tullos garden at the start of the project.



Bob and Stephen start opening the space.



The community join in later.



Evaluations of the current space at the other schools were undertaken and proposals given to the schools of the potential spaces that could be used to site the new gardens.

Construction

The project proposal identified that ACC was to be the key provider of putting the gardens into place. The budget allowed for construction costs of £2,000 for creating the 2 new gardens and tidying up the existing one at Tullos. This money was ring fenced within the community growing fund and allocated to the council on the recommendation of Bob so that any costs incurred could have VAT recovered on them by ACC. It would also simplify any cross charging required for use of ACC resources.

After being advised that third party contractors whom ACC looked to use to do the construction could not do the work within the budget, we looked at how we could resource and deliver the garden space.

As outlined above, EIS Waste provided materials, and are now a source of free recyclable materials for similar projects, through liaising with Stephen Bly of ACC.

Doug Gibb of ACC joiners kindly allocated one of his apprentices (Ryan) to assist in constructing the raised beds along with Bob Donald and any OSF volunteers we could get. Doug also took a delivery of old posts from EIS and turned them into pointed posts that we were able to use in the construction. CFINE staff picked up the timber from Grove and took it to the various sites. Again this was done without a charge to the project.

Construction of Raised Beds at Bramble Brae



The garden designs had been done in conjunction with the pupils and Bob and Ryan and misc. helpers got all of the frames of the raised beds in each garden built within two days on site. The beds were designed in such a way that the pupils could access them without having to step onto the soil.

Topsoil was sourced from Joss Quarries after a reference from Mike Chalmers at Grove, and this was purchased by ACC and delivered to Grove then distributed to each of the schools. The topsoil was loaded into the frames by Bob and volunteers. Mike also sourced compost from Keenan's and this again was delivered by Mike's team to the sites and put into the raised beds by OSF.

There was a lot of unbudgeted project management and goodwill to get this done which the community growing fund has benefited from with only topsoil and compost costs being incurred for all of this construction.

iii. BUILDING RELATIONSHIPS WITH COMMUNITIES

We were keen for the gardens to be seen as not just a resource for schoolchildren but also as a means for connecting with the wider community, where we could try to gain some expertise from local volunteers as well as a possible source of garden maintenance during the school holiday periods. Our aim was that by making the garden space not only about growing for pupils but also for others in the community to share and learn in, there was more likelihood that the project would become sustainable and less chance that it would be subject to vandalism. The space should be used as much as possible, and community engagement by having picnic and play areas close to the garden would make it an area that the local residents could regard as their own. They could even do some weeding and pruning whilst they were sitting nearby if the mood took them! Each of our school's gardens is located in areas that are either near benches or play equipment.

Our first step was to ask the schools to let parents and guardians know about the project. One way to do this was for the schools to send a letter home with each of the pupils. However we felt that a better way of engaging was to let each pupil be responsible for looking after their own seeds that they would take home and grow. Everyone in the class chose either peas or sunflowers, which are good examples of fast growing plants that have a short germination period and can grow into very large plants which the children will take pleasure in having started from a small seed and a little bit of compost in the school classroom. As well as letting family members see what they are going to be doing at school, it started the pupil on a journey about growing. Some succeeded with their plants growing well, whilst for others the germination will not take place at all. It is important that this is not seen by them to be a competition but part of the learning experience. We also had the teacher grow examples of the plants in the classroom at the same time so the pupils could compare with their own and also see that some seeds won't grow at all.



An impressive sunflower grown from seed by a pupil at Tullos school.

We also tried to engage with the parent's councils at schools. The only one that we were able to meet with was at Bramble Brae. There was a bit of interest but nothing concrete came from it. We would recommend that meetings are held with these groups as early as possible in the process as it is possible that the parents will know someone who has direct gardening or building skills or can offer suggestions about companies or groups that may be approached for assistance.

As well as school parent councils, we made contact with the local community councils and asked for a few minutes of their time to talk about the project. Bob Donald spoke at a Torry Community Council meeting and as a result of this we gained 15 volunteers who helped to clear the grounds at Tullos Primary school in November 2017, including two local councillors. The pupils from our classes at Woodside Primary did a presentation to the Woodside Community Council in the Spring of 2018 and this resulted in a small cheque for funds towards the garden being given to the children. They are still deciding how this will be spent, but cherry and apple trees seem to be a favourite!

There are local volunteer groups in each area that may be able to help. We spent time with the volunteers at Cummings Park Community Flat and they offered time and advice for support of Bramble Brae. We also spoke with the Family Learning and Food and Fun groups to potentially get support during the summer holidays. The Food and Fun group at Tullos primary have spent some

time with children in the garden doing weeding and watering. Bob also went in for a couple of these lessons and we picked some vegetables that we hoped would be used for meals for the group the following day. Unfortunately the canteen staff would not use the vegetables as they were not on their list of “approved” foods. One of our recommendations is that the Council review the policy of using produce grown in the gardens in the school canteens. The children that picked some of the produce were offered to take it home with them.

The Family Learning group at Bramble Brae brought three families in for us to work with over the school holidays. We did some planting with the children and also gave away some produce for them to cook at home.

For community groups to be involved there are things to consider though, as we are dealing with children. It may be that the work can only be done outwith school hours or that there is more supervision needed than may be at other times. It is important to talk to the community groups to find out the makeup of their members and the needs that they have, as well as thinking about how much interaction their needs to, or will, be with the pupils. However, these caveats should not put you off looking for groups to become part of the garden network. Learning outdoors and being physically active is not restricted to the younger generation. Looking for an older group to be involved and to do small tasks with the pupils will benefit both age groups.

Inviting parents and community to a school assembly which focuses on the garden can be another way of communication information about the gardens and potentially getting parents and the wider community involved. Tullos school produced an impressive theatrical presentation at a school assembly all about the school gardens and also later produced a video which was shown at



school.

PowerPoint slide introducing the garden project at Tullos school assembly.

We also worked with various groups to support the project in the growing phase of the pilot. Bob Donald made contact with Annie McIntosh at Aberdeen Foyer Healthy Minds, Heather Farquhar at Men’s Shed Outreach and Judith Balfour at Aberdeen Drugs Action. Each of these groups had teams up at Grove Nursery during the week and Bob had had previous involvement with them through the One Seed Forward seed potato giveaway programme. They were keen to be involved and each of the groups were given seeds that the pupils wanted to grow and started the germination process at Grove in the greenhouses and polytunnels. Bob visited regularly but the groups did the vast bulk of

the work and grew on some strong seedlings that the pupils subsequently put into their gardens. Even though there was no direct contact between the groups and the schoolchildren, the feedback has been very positive from the social workers.

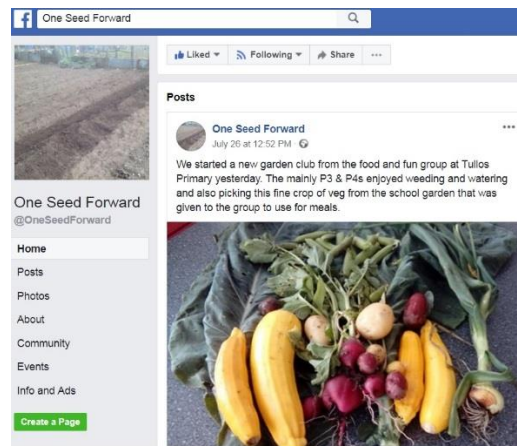
iv. KEEPING PROFILE HIGH

Once the garden has been created and groups have done some work on it, the key is to continue to keep them engaged. As well as arranging regular visits to the new growing space for the groups to take part in some form of activity, updates through social media accounts allow you to reach a large targeted audience without too much effort.

Social Media

There are various social media outlets available to you to use. The decision on which one(s) to use will be based on a couple of factors. Firstly, how much time do you have available to create content? It is vital that, whichever platform is used, regular updates on it are posted. This keeps not only your initial followers engaged, but will also act as a draw for getting more people to follow or like your posts and therefore create a larger base of potential helpers. It will also potentially allow you to approach supporters and funders who would be keen to associate with your project in return for some free advertising of the services they are providing to you to your followers. A larger database will make it more likely to get supporters.

For the school gardens project we used the existing One Seed Forward Facebook page to post news and information about the garden project.



One Seed Forward Facebook Page

Twitter

Creating a Twitter account is another recommendation for social media interaction. The school may already have an account, and individual teachers often have their own accounts which are used to show parents what their children have been doing in class and at the school. A specialist school garden twitter account will let you post photos and updates and build a following again through the ease of use of the platform. We created the OSF School Gardens account to post and retweet content from ourselves and also our schools and teachers.



OSF School Gardens Twitter Page

Community Events

Some other ideas we had relating to community involvement are through the hosting of events at the schools. The pupils will have decided what fruit, flowers and vegetables to grow, so during the growing season you can hold an event in the garden space that will highlight what has been started growing. Perhaps you could ask a local chef to come along and do a cookery demonstration featuring some of the produce that will be growing. This can have the added effect of encouraging people in the community to grow something themselves as well as gaining their interest in how the school crops are doing and helping to look after the garden when the children aren't available.

You could also hold events during the growing season. Depending upon the size of the garden, you may have an abundance of crops that can't be used before they go over. How about holding a fruit and vegetable sale at the school gates once a week? This could be an ideal project for the pupils as it will test their maths skills when weighing and pricing goods and their communication skills too as they talk to customers and try to get them to buy produce.

Newspapers

How else can you build a relationship in the community? Many of the individual communities have free newspapers and magazines that are often looking for content, and approaching the editors of these is a good way to get more visibility about the project, as these are popped through the letterboxes of people living in the catchment area that you want to connect with. The local radio station is another way of letting people know about your plans. In our case we had a number of sessions on SHMU radio, some of these involving the children themselves talking about their school garden

We were able to get great local press coverage by speaking to Aberdeen Journals, and featured in the Evening Express in November and also on the front page of the Press and Journal in June when harvesting crops at Woodside.



v. PROJECT COSTS

The cost of the original project was agreed with the Council to be £15,000. This would cover the following stages:

OSF Project Management – 150 hours @ £20 per hour	£3,000
ACC Landscape works	£2,000
Garden equipment, plants, seeds etc	£1,000
UoA Educational Programme development	£9,000

The actual cost to the Council has been £13,500. The direct reduced cost has been due to the monies that Bob Donald asked to be ring fenced at ACC for landscape works after it was established that ACC’s costs would be higher than that allowed in the pilot funding. Bob did this so that ACC could recover VAT for any third party purchases. (One Seed Forward is not VAT registered). The only costs that have been allocated within the Council to these cost codes is approx £500 which was for topsoil and compost purchase. Some of this cost relates to the vertical green wall project, but OSF do not have visibility to details of the full spend. The requested purchases from Bob were thought to be no higher than £250.

As the gardens were built through obtaining free recyclable material from EIS Waste, and construction by Bob and the goodwill of the ACC joinery department, no additional charges were made to the pilot. The filling in of the raised beds with topsoil and compost was also done by Bob with the assistance of OSF volunteers free of charge to the pilot.

It should be noted that the amount of hours spent on the project was vastly more than that budgeted. This was due to more time being spent with 5 classes instead of 3 and therefore enlarged pupil numbers, project and construction time by OSF increased due to having to build and sort the materials for the garden construction, and the increased amount of project time spent on site by Donald Gray and Laura Colucci-Gray. All of these costs are borne by OSF and UoA, but it is important to highlight this when factoring in the costs associated with subsequent garden builds at other primary schools should the pilot progress. It is estimated that over 500 hours was spent in OSF project management time and 35 days by UoA against a budget of 150 hours and 13 days respectively.

We are recommending that a project coordinator be allocated to the school garden project, possibly a current employee based in either the Sustainability or Educational departments of ACC. Their job would be to facilitate the construction and installation of the gardens with other departments in ACC after consultations with the schools, and to work with community groups at Grove to provide materials for the pupils to plant. The construction of one garden with 6 small raised beds took 4 man days for building the beds and 4 man days for filling with topsoil and then compost.

PART 2: SUPPORTING LEARNING

Alongside the construction of the gardens, the project team worked to produce learning and teaching support materials. Initially the team took on the role of engaging with the pupils in the class and delivering some of the materials in class lessons. The intention had been for the teachers to take on the role of taking forward the learning and teaching related to the garden. However, it was clear at the beginning that some of the teachers were unsure about the approach to take and it was necessary to work with the teachers to talk through their expectations and to assist in the development of the garden calendar, which became a key tool in considering the types of learning and teaching activities that could be undertaken. A number of teaching and learning resources were produced, or already existing resources identified and provided for the classroom based and outdoor learning activities. Here we look at the evidence of impact on pupils, teachers and the wider school community and consideration of support that may be required for future developments.

i. PUPILS' ENGAGEMENT

A key part of the project was to work with the pupils to develop in them a motivation for working in the gardens and to inculcate a sense of responsibility. As stated in the original proposal it was intended that the children take ownership of the garden space as well as working towards improved learning in areas related to the Curriculum for Excellence.

While the project was not set up as a research project, there were a number of practices incorporated into the developing project which allowed for some evaluation of the achievement of these aims. The first of these was the depth of observations and notes taken during the project by the participant observers, these being primarily the two academics and two PhD students each of whom focussed on one of the three primary schools, although everyone contributed feedback to these observations.

We also noted the impact that the garden project had on behavioural issues. It was clear from the observation notes and from feedback obtained from the teachers at the end of the project that pupil engagement was substantially increased and poor behaviour became much less of an issue than in some classroom routines. As stated by one of the teachers:

"Best thing? Seeing the responsibility and maturity of the children in my class. Been out here 40 minutes and they're still engaged and interested and really care about it".

The caring aspect and sense of responsibility, that was inculcated in the children was something that was noticeable more and more as the project went on. As stated by a teacher:

"I have enjoyed seeing that nurturing side of them, for a class that find it quite difficult to get on with each other. They have been able to work together to create something.....that they're quite proud of."

And another when asked about whether it was a positive or negative experience with respect to the children: *"Positive definitely, I think responsibility and taking ownership and actually caring for another thing..."*

The children too highlighting what they had learned with respect to caring and responsibility: *“[we learned]...like how to plant them carefully, and not just go, oh yeah, like, there’s a hole and just shove it in. You do it nice and gentle.”*

As well as the children recognising the benefits for wildlife, mentioning butterflies and bees and one child at Tullos (which has a pond) stating *“Because like it’s good for nature and frogs, ‘cause I think a lot of frogs have gone, and that can keep them like living, but like the dry ones, well they do go into water sometimes, maybe, but they...the ones that like being in water, it’s good for them ‘cause like they know...so like they don’t die.”*

It also clearly had a positive impact on many of the children’s emotional wellbeing, one child stating *“I got my mental health better”!* One of the teachers also mentioning the very positive impact the garden had on an autistic child in her class: *“one of my autistic kids, he literally swears by this, he loves it and he’s so exact about everything and he has just taken that ownership and that responsibility, it’s good for him. I definitely, definitely think this is something that he...I don’t even think he knew much about gardening before, I don’t think he knew anything at all because he wouldn’t have done it at home, but he can tell you a lot more about gardening than I can, he’s really...and even he takes his learning outside. He’ll talk about the flowers in his garden at home or this, that and the other. So that’s really, really great, he’s just excited by it”.*

Of course one of the aims of the project was to improve learning in areas related to the Curriculum for Excellence. While we did not set out to measure children’s attainment, there was certainly sufficient observational evidence to suggest that the children were much more engaged, as well as very positive feedback from the teachers with respect to the curriculum links.

“The project links in with eating and nutrition, the designing was maths and science, learning about germination, it all linked in with our science curriculum”.

Another said, *“I think, the project’s a fabulous idea. I think it’s really, really good. I think all children should be doing it not just, like you said, our own children here, I think, you know, they learned so much from it.”*

Yet another stating, *“I think it’s been really, really beneficial for the children. Right from the beginning where it was designing a garden, so there was all the design elements, through to learning about how plants actually grow and germination to then the actual planting and they’ve been really, really responsible in how they’ve actually taken care of the plants, which has really impressed me. I think it’s been really good for them.”*

Overall, then, the project was seen in a very positive light by both pupils and teachers. While it requires some planning and thinking around activities to keep the children engaged over the winter months when there is not so much active gardening to do outdoors, it is clearly very feasible to develop a series of linked classroom and outdoor based lessons to cover a range of curriculum areas: art and design, literacy, numeracy, mathematics and science being amongst the principal ones. However, it was also noticeable that the engagement with the project spread beyond the classes which were principally involved, to other classes which became interested in the initiative. See section iii below.

ii. TEACHER LEARNING

It was interesting to note that, as well as the considerable engagement and learning that took place on the part of the pupils, there was also considerable learning and personal and professional development on the part of the teachers. Initially, in the earlier parts of the project there was a tendency for smaller groups of children at a time to be taken out to the garden space with the teachers staying in the classroom with the remaining children, often with a member of the academic team leading the classroom activities. On other occasions some of the teachers were very proactive in developing and leading the classroom based activities, with others less so.

While some of the teachers indicated an interest in gardening, this tended to be quite low level with little active gardening experience, perhaps just one teacher indicating so. The others tended not to have the interest, time or garden at home to be involved in personal gardening activities:

"I don't wildly have interest, I'd like to be interested in gardening, but, no."

"No, it's something I'd like to be interested in, but I don't have one, so I've never really gardened."

"No, because I live in a flat, so, we don't have a garden. Not really, I like getting, like, a nice bunch of flowers, but that's about it."

"I like a nice garden. In my last school I worked with the gardener, I worked with her and I learned a lot from her but I wouldn't say I'm a gardener. But I do... I actually do enjoy it, yeah."

While most of the teachers had limited personal gardening experience, some indicated that they enjoyed participating in the garden project and learned from it:

"So I really was starting from scratch learning everything new ... I will learn every from scratch myself, which is great because I was learning with the kids as well".

This is perhaps something that needs to be taken into consideration in any future development of school gardens. It is important that the individuals overseeing the garden in any school have appropriate experience, or they are fully supported by someone who has. This was expressed by one of the teachers:

"I think, what has been really helpful is, having somebody who knows about gardening coming in regularly and actually helping. That would be, I think that would be good for it to develop overtime..."

However, it was also clear that the teachers benefitted from the experience of involvement in the garden project and, over time, had become more confident:

"Yes, absolutely, I feel a bit more confident. Like as I said, I wasn't confident at the start with things like that but over time, now I am, and I think I would be ready to take this forward."

In summary, while there were some initial problems in fully engaging teachers at the beginning of the project, this became less of an issue as the weather improved and the children were able to be more actively engaged in the development and maintenance of the garden. Over time the teachers learned more about the garden and their confidence increased. However, it was also noted

that ongoing support would be required and that CPD opportunities for teachers using garden spaces:

"I think it could be a good context for CPD for sure, in just showing like what sort of stuff that you can do in the garden other than directly gardening, how to use it for different things..."

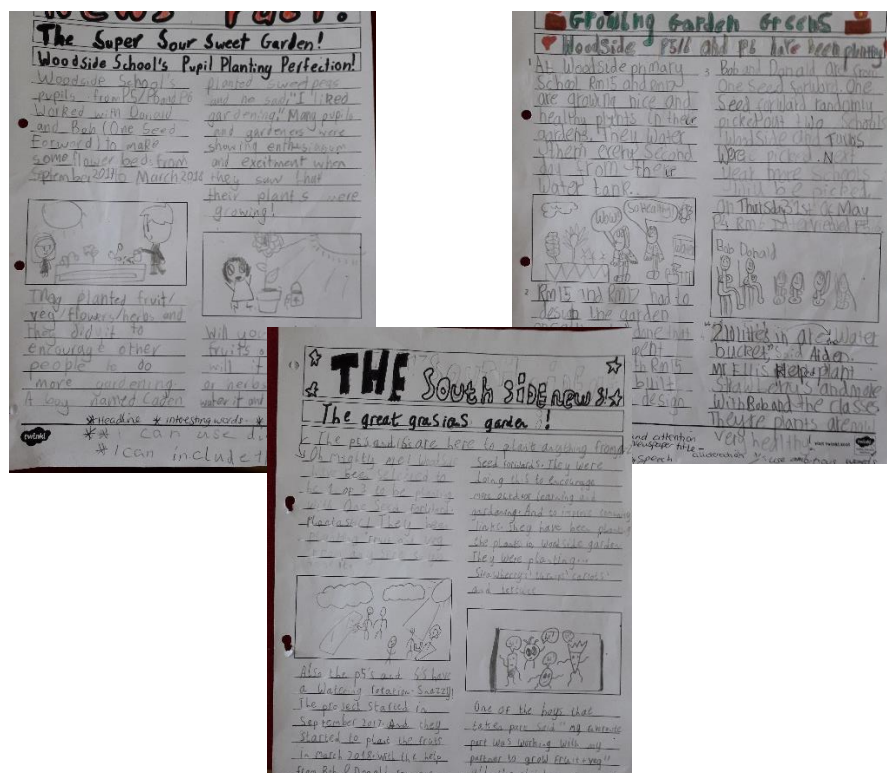
"So I definitely think quite an active CPD would be good... you've probably been on loads of CPD's as well, when someone is just talking at you, ... but I definitely think quite an active CPD, just to see how it's done..."

This initial pilot garden project, while on the whole very successful, raised issues around selection, support and development of teachers involved in any garden project. Teachers generally found the garden project a very beneficial experience, gaining in confidence and learning a lot, but there are lessons to be learned for selection and preparation of teachers both in terms of understanding the garden and how it is maintained, but also in developing a better understanding of how to link the garden activities with the curriculum.

iii. SCHOOL WIDE INVOLVEMENT

Perhaps a rather surprising outcome of the garden project was the way in which the gardens became a feature for the whole school. Although it was primarily the selected classes who were actively involved and responsible for the garden, it became apparent that many of the other children became interested and there was scope for engagement of children beyond the classes involved, but the numbers and practicalities meant that was not possible.

One class in one school not directly involved in the project, however, used the gardens for a literacy activity with children from that class interviewing children in the project class and then producing newspaper articles about the gardens(see below).



In one of the other schools the gardens became the topic of the school assembly with the class involved all taking turns to present a dramatized presentation of the garden project.

While visiting the schools the project team were aware of interest in the gardens expressed by other members of staff. The children in the classes involved also expressed the idea that more children could be involved, for example by distributing the vegetables produced to some of the other classes:

“Like give them [the vegetables] to other people, like see how some of the P1’s, they’re not doing the garden, maybe we should give some to them?”

These few examples of spontaneous interest in the gardens by other members of the school community, and recognition of potential for wider engagement from the children who were actually involved, suggests that there is considerable potential for garden developments to be incorporated in whole school activity in different ways. This is perhaps something that can be explored further in any future developments.

KEY ACHIEVEMENTS

As described in previous sections this pilot project provided evidence about the potentially very significant impacts that the development of school gardens can have in schools, potentially impacting on curriculum learning, health and wellbeing, community involvement, healthy eating and sustainability.

Key achievements from this pilot can be summarised as:

- 5 P5/P6 classes, 140 pupils took part in pilot
- 4,000 hours of outdoor learning
- Other pupils engaged through tasting sessions, newsletters, assemblies etc.
- Parents/Siblings engaged as pupils took seeds home to grow, then crops at harvest
- Gardens constructed under budget
- 25 different crops grown
- Over 100kg of produce grown since April 2018
- 50 volunteers
- Over 200 volunteer hours
- Community group support from Aberdeen Drug Action, Aberdeen Foyer Healthy Minds, Men's Shed Outreach, Family Learning, HIF, One Seed Forward, Food and Fun groups etc
- Media Coverage in Press & Journal, Evening Express, SHMU, BBC Landward.
- Bramble Brae presented project at the Aberdeen Sustainable Development Conference
- Social media presence through Twitter account.

RECOMMENDATIONS

The following are suggested recommendations resulting from this pilot project:

- I. Educational programme is rolled out to Head Teachers.
- II. ACC dedicate resources to be the local authority in Scotland leading the way in creating a garden in every primary school.
- III. A school garden project coordinator role is created in ACC to liaise between the schools and ACC departments for construction, soil and compost provision, plant purchasing etc.
- IV. Garden space should be small to begin with so it can be maintained - it can be expanded as experience and confidence grows. A minimum of 4x 1x1m planters per class.
- V. ACC to support inter-agency working using the gardens and to provide Public Liability Insurance cover for volunteers on school grounds.
- VI. External storage should be made available for community use of garden equipment.
- VII. Consideration of school gardens to be treated as an integral part of the school infrastructure and grounds with maintenance provided accordingly e.g. Access to water should be provided by external taps close to the garden (These should not be switched off during the summer holidays).
- VIII. Weed killing should be done at Tullos Primary after the current crops have been harvested and the old planters should be removed and replaced as they are rotting, and full of horsetail, a nuisance weed.
- IX. An interest or knowledge of gardening would be advantageous amongst teachers participating.
- X. Early engagement of parents and/or community groups should be encouraged.
- XI. Community engagement could be further encouraged by contacting all people on the Aberdeen allotments waiting list and asking them to be involved in supporting a school garden. Proposed reward could be that participation would result in them being prioritised in the allocation of allotments.
- XII. The schools treat the garden as a continual learning area, not a once a week site visit.
- XIII. Consideration be given to supplement daily mile with gardening activity, and that an average of 2-3 hours per week be allocated to learning in the garden.
- XIV. Crops grown on site should be used as part of school meals.
- XV. Parents should be invited to tasting sessions of crops grown as a means of highlighting school meals and increase the potential take up of free school meal provision.
- XVI. Consider a programme of CPD for teachers linked to school gardens.
- XVII. ACC encourages School of Education at the University to introduce garden experience for student teachers as part of core preparation.