THE UNIVERSITY *of* EDINBURGH
Moray House School of Education and Sport

Regional Skills STEAM Garden Pilot Project

Summary Report

We would like to extend a special thanks to all the pupils, student volunteers, and staff who participated in the pilot for their hard work, enthusiasm, and commitment.

The Catalyst

The STEAM[1] Garden Pilot Project brought together University of Edinburgh student volunteers and S1-S3 pupils at Castlebrae High School in learning about food growing in the school garden. The focus of the pilot was to provide a space for pupils to learn about growing food and caring for vegetables as one of the key Sustainable Development Goals, and to engage in sensorial and practical activities supporting good mental health and wellbeing. The key aims were to:

- Introduce pupils to food growing as a means to learn about food sustainability and acquire new practical skills.
- Facilitate learning across the curriculum and the development of skills to sustain health and wellbeing.
- Establish peer-to peer learning whereby school pupils and University students can learn together and from each other.
- Set out pathways for participants into further education and future career opportunities.

The project involved **20 pupils in two Nurture groups and one Elective group** in the school. These groups included pupils who may have experienced issues including poverty, neglect, social isolation, and trauma, and who attended these groups for additional support. A **group of 14 students** were recruited on a voluntary basis from across different programmes at Moray House School of Education and Sport and other Schools in the University.

The student volunteers took part in two online training sessions with academic and technical staff at Moray House, and staff from the school, to plan and explore different resources and strategies for the sessions at the school. Following the training, the students were split into groups:

- Two students each worked with the two **Nurture groups**, in 50-minute sessions planned across 8 weeks. These groups used a garden space within the school building.
- Five students volunteered with the **Elective group** in May, with another five taking over in June; the sessions lasted 1 hour 40 minutes and were planned over the course of 8 weeks. The Elective worked in a garden space at the back of the school, out with the school building.

Very few of the pupils in the Nuture and Elective groups had access to garden spaces at home or any experience of gardening. Many also had few opportunities to experience the wider world outside of their own community. The garden spaces in the school had not been worked on or maintained for some time, and the school welcomed the chance for support from outside. At the beginning of the pilot, the gardens were overgrown and full of weeds; this offered the pupils and students a 'blank canvas' for planning what to do with the spaces.

A researcher from University of Edinburgh conducted five visits to the school during the project for observation, and interviewed each of the student volunteers and school staff before the pilot began and after it concluded.

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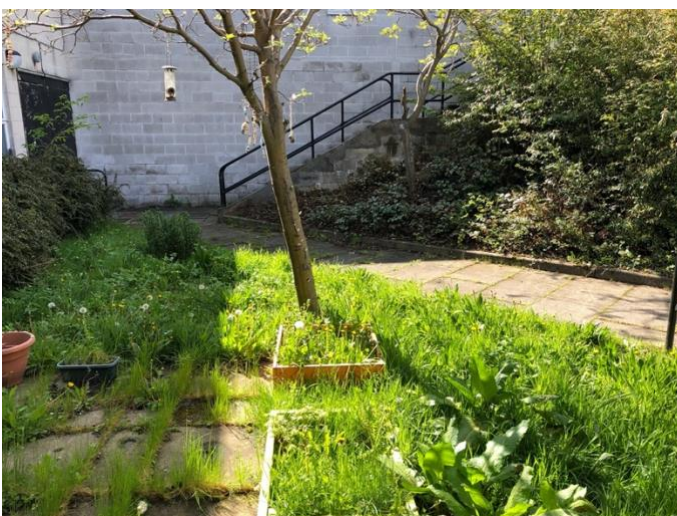
[1] STEAM education is an approach that incorporates Science, Technology, Engineering, Art, and Maths.

Building Relationships

The student volunteers were able to **gradually build a trusting relationship** with the pupils over time, and staff noted that the pupils began to feel comfortable and share openly with the students as the sessions progressed.

> *I noticed on the walks that kids would sometimes hang back to talk to one of the students, which was really good, whereas at the beginning they were very much, like they stayed away. But by the third session, when the students came around with books and stuff and they were going through plants, they were willing to show the students stuff they'd written and pictures they'd drawn*. **School Staff**

However, due to the short-term nature of the project, and the change-over of students half way through the Elective Group, participants felt that **the potential for making connections was not fully realised**.

> *If it were longer I think the relationship building between, like the volunteers and the pupils… those could have been like quite meaningful relationships*. **Student volunteer, June Elective Group**

Moving from inside to outside was seen as increasing engagement and focus for all participants and in the project itself. The students noticed a change in how the pupils expressed themselves once they moved outside.

> *When we went outside there was a big shift in how expressive the kids were, they would talk about anything and everything. In the classroom, some of them especially, felt a bit sort of trapped and like they wanted to get out, they were itching to do something more exciting than just sitting on a chair*. **Student volunteer, May Elective**

The gardens were viewed as a **calming and more 'equal' space that helped to develop connections, collaboration, and teamwork** more naturally than in the classroom.

> *Once you're outside it's kind of more equal and everyone's helping out so it doesn't really feel like you're, like, teaching as such… it felt a lot easier once you were outside just to have more conversation and it'd be kind of more two way, and just sort of helping everyone.* **Student volunteer, May Elective**

Developing Knowledge and Skills

Working in the school gardens provided a wide range of **learning opportunities** for the pupils. The sessions and activities led to 'learning conversations' around gardening, nutrition, and where food comes from. It offered valuable opportunties for pupils to take the lead and share their knowledge with peers and others.

> *We were asking them to kind of draw their favourite foods. [One pupil] said his favourite meal was soup, and he was really interested about where all the ingredients had come… It was almost as if he really wanted to talk about it and was really interested in it, he just hadn't really had an opportunity like that to think about where his food had come from*. **Student volunteer, June Elective.**

Spaces were created for pupils to engage in **practical and experiential learning**, and many showed enthusiasm for getting 'hands-on' in a way that transferred into engagement in the school and also learning at home. For example, some pupils took the seedlings home to plant and look after.

> *One wee boy started to take seedlings home and him and his gran, grandad, they started a wee edible garden. So that was amazing. It was at his grandad's because he doesn't have a garden, but he took the plants and stuff and he talked about it openly and how excited he was, he brought in pictures to show all these courgettes and peas and things, and he was absolutely delighted by it.* **School staff**

The pupils began to develop a sense of **ownership and responsibility** in relation to the garden spaces. Involving the students in planning, mapping and deciding what to plant developed a connection to the gardens; a space that was truly 'theirs,' that they valued, and that they looked to protect from littering and vandalism.

> *One of the boys… said somebody's dropped plastic here. Because we did a big, huge clean up. And this is a young boy that I've seen myself chucking stuff. But when he was in the garden this morning, he said there's somebody left plastic and we cleaned all that.* **School Staff**

> *I think it's nice to watch them take ownership of something, because a lot of these kids don't have a lot of things that are their own. And to work together to make something, and to have that, this is ours and this is what we've done, and that pride that they get from that is fantastic to see.* **School Staff**

Nature, Nurture and Wellbeing

Interacting in small groups in the outdoors also fostered **more positive relationships** and formed new friendships between the pupils. School staff noted that pupils had developed empathy and social skills around communication, patience, and conflict resolution.

> *Meeting people from outside, from different walks of life was really interesting for them too. Even that social interaction of finding out about people from different countries or where they lived. But definitely the group gelled, in terms of they made little friendships within it.* **School staff**

The garden project also raised aspirations and helped to **develop pupil confidence and self-esteem** over the course of the sessions; this was considered by staff to be the most important impact of the project. Pupils were able to recognise their different skill sets and feel **a sense of pride and achievement** in their work in the gardens.

> *To be able to do something at school and get praise and to do something that they've done themselves... It may seem a very little thing but for our kids, it's huge to be succeeding in something.* **School staff**

There was some indication that the artistic and creative activities encouraged pupils to communicate and express themselves in different ways, and provided opportunities to showcase skills in a form that was not always possible in other areas of their learning. However, there is room for **further exploring how Art, and the other STEAM subjects, can be integrated in and complement a school garden project**.

Further Careers and Professional Development

The students commented that the project had provided them with **valuable experience of working with young people** and raised their awareness of issues related to poverty and health and wellbeing. The students also felt they had developed skills related to communication and teamwork. Several talked about how the **project had raised their confidence and potentially influenced their future career choices**.

> *I was thinking maybe becoming a teacher and being in these sessions, I thought, yeah… so in that way I also found that inspired me and my future career choices.* **Student volunteer, Nurture Group**

The staff at the school commented positively on the project and its impact, but there is **scope for exploring further how teachers and other staff may benefit** from involvement in a project such as this. They did praise the way that interaction with the students had helped to raise pupil aspirations.

> *The students coming from a university is fabulous for them to see and recognize that they could also have a chance to go to university*. **School Staff**

Looking Ahead

Throughout the pilot there were a number of challenges related to the short timeframe and communication between participants and organisers. Both students and staff felt that **more time was required for the project to fully realise its potential**.

> *It was a shame that we didn't get to see the project through, it felt like it was a short-lived experience at the school, so I would have liked to see the garden actually blooming.* **Student volunteer, May Elective**

Many of the participants commented that a key change they would make would be to have **no changeover of volunteers** halfway through the Elective group.

> *Our kids were just beginning to really open up to them and look forward to them coming in and then they left. Then we had new students. I noticed that week that the kids were all quiet again. So, whether in the future if we do it that we have a longer amount of time with one set of students.* **School Staff**

A **central point of communication, more guidance from and opportunity to collaborate with the school and university, and a clearer indication of roles and responsibilities** were also highlighted by students as key considerations for how to develop a project of this kind in the future.

> *It's hard because of COVID, but I think if you can have an extra person there to support, because I feel like we were still learning as well as the kids.* **Student volunteer, June Elective**

Some students did also comment that the challenges had provided an opportunity to **develop problem-solving skills and resilience**. All staff and students were enthusiastic about the potential of school garden projects, and indicated they would be interested in continuing or participating again in the future. There were also suggestions for how to **further involve the pupils in the planning and organising** of the project sessions and activities, to give them greater ownership of the process.

> *In the beginning, asking the pupils, what do they want out of this experience? What do they want to accomplish and what are they most interested in? Being maybe a bit more deliberate with understanding what the pupils want.* **Student volunteer, Nurture Group**

Recommendations

Some recommendations for future development include:

1. Organising a longer-term project where student volunteers visit the school over the course of a term, or school year. The pilot was restricted in some ways by the short timeframe; extending this would allow the gardens and connections to develop more fully and provide a clearer indication of the impact on pupils, students, staff, and the school.

2. Exploring the potential for organising the pupil and student groups in different sizes and formats, holding more sessions outdoors, and extending the time for the Nurture sessions beyond 50 minutes. Establishing continuity, familiarity, and trust is key, so any changeover in student volunteers would be discouraged.

3. Investigating alternative ways to capture the experience of the pupils directly, and involving pupils more in the planning of the activities and the sessions.

4. Establishing a central point of contact in the form of a project coordinator and exploring different modes of communication outside of Microsoft Teams for facilitating open and regular discussion amongst participants and organisers.

5. Facilitating further opportunities for collaboration and planning between school staff and student volunteers, and arranging further input from University team members where appropriate.

6. Incorporating more of a focus in the training sessions for students on translating plans for activities into practice, and a discussion around their role within the project and further preparation for taking a lead in the sessions.

7. Promoting further involvement of staff from across the school in the school gardens and making more explicit the ways in which staff may potentially benefit from the project, for example through professional development opportunities.

8. Further implementing the subject areas of STEAM in the project in a way that is consistent and adds value to the project activities and sessions.