

## Board of Management

### Learning, Teaching & Student Experience Committee

<b>Date of Meeting</b>	<b>Tuesday 12 November 2024</b>
<b>Paper No.</b>	<b>LTSEC2-G</b>
<b>Agenda Item</b>	<b>4.7</b>
<b>Subject of Paper</b>	<b>Planting a Seed: Sustainable Education for Students with Additional Support Needs</b>
<b>FOISA Status</b>	<b>Disclosable</b>
<b>Primary Contact</b>	<b>Don MacKeen Teaching Staff Board Member</b>
<b>Date of production</b>	<b>31 October 2024</b>
<b>Action</b>	<b>For Discussion</b>

#### **1. Recommendations**

- 1.1. The Learning Teaching and Student Experience Committee is invited to discuss and consider research into a gardening project spearheaded by the Supported Education Department.

## **2. Purpose**

- 2.1. The purpose of the paper is to inform the Committee of research into the use of urban gardening as a teaching tool with students with Additional Support Needs (ASN). This project embedded Learning for Sustainability (a key component of Curriculum for Excellence) into the Supported Education curriculum.

## **3. Consultation**

- 3.1. Consultation has been with the Chair of the Board of Management. The original research went through the Ethics Committee of the College.

## **4. Key Insights**

- 4.1. Realities of climate change make meeting Sustainable Development Goals even more urgent, not least in terms of education. In Scotland's Curriculum for Excellence (CfE) these goals are promoted in the Learning for Sustainability initiative which aims to embed sustainability in education. While inclusion is claimed to be a non-negotiable aspect of CfE, the reality is that for many students with Additional Support Needs (ASN), access to a high-quality education is limited. This paper looked at a case study where urban gardening is used as a teaching tool for students with ASN.
- 4.2. The City Works programme has grown out of nearly twenty years of work with ASN students, using urban gardening as a vehicle for developing citizenship, groupwork skills and a greater understanding of sustainability. Staff, students, and community gardeners were interviewed to ascertain their experience of the project and the value of a sustainable and inclusive education are discussed. Finally, it is argued that this educational approach should be developed further, in coordination with other educational professionals.

## **5. Impact and Implications**

- 5.1. The project proved successful in engaging learners and developing their understanding of sustainability in both practical and theoretical contexts. The students were able to develop skills that spanned problem solving and hands-on work. Engagement with stakeholders within the College and beyond showed that this model provided valuable educational opportunities and employability. Innovative use of recycled materials, organic food growing and honey harvesting meant that the commitment to sustainability was not simply a "box-ticking" exercise. The potential for this work to increase student understanding of sustainability is matched by employability opportunities.

### **Appendices:**

**Appendix 1: Planting a seed: Sustainable education for students with Additional Support Needs**

**Appendix 2: Geography for Students with a Social Difference**

Volume 13, Issue 4, pp. 098 - 119

**Regular Issue**  
*published quarterly*
**Article Info**

Received: 16/06/2022 • Accepted: 08/09/2022

Corresponding Author: (\*) [don.mackeen@cityofglasgowcollege.ac.uk](mailto:don.mackeen@cityofglasgowcollege.ac.uk)DOI: <https://doi.org/10.48088/ejg.d.mac.13.4.98.119>
 Editor: Dr Panos Manetos,  
[pmanetos@uth.gr](mailto:pmanetos@uth.gr)

 Research Article

## Planting a seed: Sustainable education for students with Additional Support Needs

 Don MacKeen<sup>1\*</sup>
<sup>1</sup> City of Glasgow College, Scotland, UK**Keywords**
 Learning for Sustainability,  
 Curriculum for Excellence,  
 Additional Support Needs,  
 Capabilities Approach
**Abstract**

Realities of climate change make meeting Sustainable Development Goals even more urgent, not least in terms of education. In Scotland's Curriculum for Excellence (CfE) these goals are promoted in the Learning for Sustainability initiative which aims to embed sustainability in education. While inclusion is claimed to be a non-negotiable aspect of CfE, the reality is that for many students with Additional Support Needs (ASN) (in Scottish education this term has superseded Special Educational Needs), access to a high-quality education is limited. This paper looks at a case study where urban gardening is used as a teaching tool for students with ASN. The City Works programme has grown out of nearly twenty years of work with ASN students, using urban gardening as a vehicle for developing citizenship, groupwork skills and a greater understanding of sustainability. Staff, students, and community gardeners were interviewed to ascertain their experience of the project and the value of a sustainable and inclusive education are discussed. Finally, it is argued that this educational approach should be developed further, in coordination with other educational professionals.

**Highlights:**

- Urban gardening as a teaching tool for neurodivergent students
- Neurodivergent students as educational ambassadors in the community
- Sustainable education through outdoor vocational practices



Copyright: © 2022 by the authors.  
 This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CCBY-SA-4.0). View this license's legal deed at <https://creativecommons.org/licenses/by-sa/4.0/> and legal code at <https://creativecommons.org/licenses/by-sa/4.0/legalcode> for more information.

The publication of the *European Journal of Geography* (EJG) (<http://eurojournal.eu/>) is based on the *European Association of Geographers'* goal to make *European Geography* a worldwide reference and standard. Thus, the scope of the EJG is to publish original and innovative papers that will substantially improve, in a theoretical, conceptual or empirical way the quality of research, learning, teaching and applying geography, as well as in promoting the significance of geography as a discipline. Submissions are encouraged to have a European dimension. The *European Journal of Geography* is a peer-reviewed open access journal and is published quarterly.

## 1. INTRODUCTION

Global curricula recognise the need for students to become citizens capable of meeting the challenges of the future, such as the climate crisis, issues regarding migration and democracy. Garcia-Alvarez & Arias-Garcia (2022) state that “a transition is currently underway from instilling in children a sense of their own national identity to an education based on common democratic values and human rights that recognises several identities at the same time (from local to global).” Despite continuing debates regarding the value of skills versus knowledge, the need for students to gain the tools to deal with the aforementioned issues is generally accepted. These aims are taken to be at the core of Scotland’s Curriculum for Excellence (CfE) (Curriculum Review Group 2004). Implemented in 2010, CfE is considered by the Organisation for Economic Co-operation and Development (OECD) to be a “ground-breaking” “future oriented education” (OECD 2021) that aims to develop student capacities in four areas:

- Successful learners
- Confident individuals
- Responsible citizens
- Effective contributors

The OECD noted that CfE faces challenges, with tensions over a “lack of clarity in the nature” of the curriculum (OECD 2021) and a “tick box approach” (OECD 2015). Mark Priestley has raised concerns, stating that it is a “mastery curriculum dressed up in the language of a process model” (Priestley & Humes 2010), yet it is also recognised that it allows for teacher agency and collaborative teaching (Priestley, Biesta & Robinson 2013, Priestley & Biesta 2013: 3), aims which echo the notion of “curriculum making” (Lambert, Solem & Tani 2015).

The needs of students with Additional Support Needs<sup>1</sup> (ASN) (defined in Scotland as any student needing support whether due to disability, issues regarding language, behaviour, or access to specialist teaching) are recognised in CfE as being embedded within Learning for Sustainability (LfS). LfS was launched in 2014 in response to the United Nations Sustainable Development Goals (Higgins & Christie 2018) and to specifically integrate three areas into CfE:

- Sustainable Development
- Global Citizenship Education
- Outdoor Learning

Every student has an “entitlement” to learning for sustainability (Higgins & Christie 2018: 557) and outdoor learning is an important aspect of LfS. While recognising the challenges outdoor education presents (Higgins & Christie 2018: 559), it has the potential to meet the needs of learners who have been marginalised within the mainstream educational system (Price 2015, Kraftl 2014, Riley, Ellis, Weinstock, Tarrant & Halmond 2006).

The aim of this article is to examine the value of an outdoor educational project, specifically urban gardening, with ASN students. ASN education will be considered in the Scottish context by outlining the work done at a tertiary college in Glasgow where courses were designed for neurodiverse students and students with learning disabilities. Development of urban gardening will be considered. A case study of one group of students engaged in outdoor learning in the gardens and community gardeners will be presented, and finally, recommendations for future study will be outlined.

---

<sup>1</sup> In Scottish education, the term Additional Support Needs has superseded the more widely used “Special Educational Needs”, to recognise the broad nature of support that different students require (EIS 2019)

## 2. BACKGROUND

I have worked at City of Glasgow College, a tertiary college in the west of Scotland, since 2003, in the Supported Education Programmes (SEP) department. The SEP department runs three courses for ASN students:

- Transitions (student cohort ~40) for students with Asperger syndrome
- Development (student cohort ~15) for students with learning disabilities
- City Works (student cohort ~10) for students from Transitions and Development who seek a vocational alternative

The course's aim is for students to advance onto either mainstream education or work. Transitions and Development have been in operation for over twenty years, and City Works was developed in 2015 as a need for a dedicated vocational alternative was recognised for a minority of students.

While CfE promotes the idea of inclusion, the experience of students is often one in which “a deficit or medical model, continues to dominate policies and, inevitably, classroom practice” (Allan 2008). ASN students are seen as “problems” to be “managed” (Armstrong, Armstrong & Spandagou 2011) and neurodiverse students are often inappropriately placed (Lyndsay, Proulx, Scott et al 2014), leading to negative experiences of education (MacKeen 2017: 60-63).

City Works students engage in work experience in a community café and urban gardens which are set within the main college campus. This article will focus on the urban gardens.

### 2.1 SEP Curriculum Ethos

The SEP courses are designed to re-engage learners not well served by mainstream education. Many of the neurodiverse students have become school-phobic and have withdrawn from formal education, so it is important that they can be brought back into formal education in a safe atmosphere. As neurodivergent students struggle to understand social interaction and communication, our courses employ a “hidden curriculum” that “outlines the general standards a community holds everyone responsible for, despite the fact that most persons may not be aware of them or take them for granted” and this “is crucial for students because it contains aspects of social behaviour vital to their future success in society” (Sulaimani & Gut 2019: 32). Class sizes are kept small so that lecturers can gain trust and understanding of the student and individualise learning where appropriate. Flexibility is built into the curriculum but one area that is non-negotiable is timetabled guidance, which occurs every week and involves 1:1 discussions with the lecturer. Finally, a robust anti-bullying policy is embedded within the curriculum.

### 2.2 Guerrilla gardening

The use of urban gardening as a teaching tool began in 2005 with Transitions students (MacKeen 2019: 50). In anticipation of the rollout of CfE, FE colleges recognised the importance of citizenship education, and I was asked to teach Citizenship as part of the course. Neither the students nor myself felt that the materials provided were particularly enlightening, and as neurodiverse students benefit from concrete activities, I chose to focus on earlier discussions regarding the local neighbourhood. At this point we were located in the Gorbals, a working-class neighbourhood of multiple deprivation south of the River Clyde, which was not well served by the local authority. Students often complained about littering in the area, so with the aim of introducing the concept of active citizenship, we began regular litter picks. This created space for discussions about the “right to the city” (Harvey 2003) which were obviously of a geographical nature. The students often argued that the city council should do this work, but I posed the question: if we don't do it, who will? This work then led to our first

foray into guerrilla gardening, and establishing a vegetable garden which continues to this day.

**Figure 1.** Gorbals garden (photograph by D. MacKeen, Glasgow, 2006)



### **2.3 Rooftop gardens**

After a merger of three colleges, CoGC moved into a new building in the central business district in 2016. Two rooftop spaces were designed for gardening, one with raised beds on the fourth floor (Figure 2) and another with a larger space on the seventh floor (Figure 3). The seventh floor garden was developed into an orchard with heritage fruit trees. Students from Transitions, Development and City Works were involved in the development of these spaces. These spaces are now used as outdoor learning spaces by these students, primarily City Works. Students participated in the design and maintenance of the spaces, and the produce which is harvested is supplied to the College's catering department.

**Figure 2.** Fourth floor rooftop garden (photograph by D. MacKeen, Glasgow, 2022)



**Figure 3.** Seventh floor rooftop garden (photograph by D. MacKeen, Glasgow, 2022)





## 2.4 Vocational Capabilities

The City Works course was developed as a vocational alternative for a minority of Transitions and Development students. While most SEP students move on to courses in the college (or to other colleges), the need for a work-oriented educational alternatives was recognised.

The course was designed with the particular differences of the students in mind. Therefore, a Capabilities Approach (CA) was employed that considered the need for students to not only think about future work opportunities but developing a “more fulfilling life” (Terzi 2005: 6). Developed from the work of the welfare economist Amartya Sen and the philosopher Martha Nussbaum, CA seeks to “counter the utilitarian view of welfare economics” and recognize the importance of human agency (MacKeen 2017: 25). To develop their capabilities, people must be able to meet needs *and* wants (“functionings”) which can lead to “human empowerment” (Lambert et al 2015: 724, emphasis in text).

In terms of the horticultural part of the course, powerful knowledge regarding sustainability was integral to the curriculum. The curriculum of City Works emphasised that the horticultural work was not simply an opportunity to learn vocational skills but to develop a deeper understanding of the need for sustainable horticulture. As one lecturer (Participant 9) noted, students were able “to apply their own problem solving skills and initiative in the gardens. They could identify and remove annual and perennial weeds, they understood the importance of sustainable practices, and organic principles.”

The relationship between student and teaching staff on SEP courses meant that there was a more participatory ethos, which allowed students to develop their agency. Participant 9 (lecturer) found that by the third term the students “could work on their own initiative and in a cooperative manner” and that they “were more a team of equals than teacher and students.” In contrast to standard vocational approaches, “...which emphasise economic growth and income generation as key development objectives with employability and the creation of human capital...the capability approach emphasises human flourishing, with economic growth seen as a necessary but not sufficient means to achieve development.” (Powell & McGrath 2014: 11).

### 2.4.1 Eco-Capabilities

The Eco-Capabilities project (Walshe, Moula & Lee 2022) is designed to engage students with the arts, to develop their well-being through a connection with the environment. The project uses CA to allow the students to develop their agency to gain empowerment and determine their future. The project allowed students to connect with and gain a greater understanding of nature through outdoor art education, and in contrast to standard teaching about sustainability “that imposes the responsibility of saving the world on children”, the Eco-Capabilities approach “could serve to provide a more gentle and empowering way to engage children with issues of environmental sustainability.” (Walshe, Moula & Lee 2022: 20). While specifically an arts based approach, Eco-Capabilities offers valuable insights in using a CA approach, particularly as many of its findings mirror those of this study. This will be discussed in more detail in Section 5.

## 2.5 Assessment Materials

Assessment materials have been developed for the City Works course to meet the particular needs of the students. The students undertake a National Progression Award (NPA) in Horticulture at Level 4 of the Scottish Credit and Qualifications Framework (SCQF).

The design of the assessment materials considers the range of different approaches necessary for successful engagement. As there are a variety of neurodivergent students on City Works the materials are presented in a straightforward manner and employ visualisation when appropriate (See Figures 4 and 5).

The students worked in both practical gardening and classroom sessions. The classroom sessions provided the theoretical portion of the learning and the gardening sessions were hands-on opportunities to turn theory into practice. However, the line between theory and practice was not absolute and there were many opportunities to gain theoretical knowledge in the garden space, such as the sessions on soil, which allowed the students to gain a deeper understanding of the nutrient cycle.



Online materials were designed for students who could use computers, while those who could not were able to work with the lecturer directly. These materials were also used in whole classroom settings so that the entire group could gain an understanding of the materials. The course materials emphasised the importance of sustainability (see Figure 5), so that the students could move beyond a superficial understanding of the issue. While City Works is not a geographical course, Maude’s (2016) typology was helpful in considering the sort of powerful knowledge that informs the theoretical portion of horticultural learning. To develop the student’s understanding of the issue of sustainability, the issue of place, particularly that of a garden within an urban area, was important. Discussions about how cities function, for whom, and how citizens can gain control of and manage their cities through sustainable, organic gardening were essential in allowing the students to make the connection between theory and practice. This helped the students to gain “new ways of thinking about the world” (Type 1) and the lessons on the importance of the nutrient cycle for soil helped them “analyse, explain and understand the world” (Type 2).

**Figure 4.** Assessment materials, with examples of suitable responses

**Soft Landscaping H1XB 10**

**Outcome 1**

Identify the following tools and equipment used in soft landscaping and give the use and the personal protective equipment (PPE) required when using each one.

Tool/equipment	Name	Use	PPE required
	Brush	Sweeping hard paths and surfaces	Gloves to protect hands from splinters
	Shovel	Move large amounts of debris, gravel or soil from one area to another	Steel toe cap boots to protect feet.

**Figure 5.** Online learning materials

What's in it for me...and the planet ?

 Read This

### Sustainability

What does this mean? People talk a lot about sustainability, especially with regard to Climate Change. We are using up too much of the planet's natural resources, destroying the forests and the rivers, and pumping pollution into the air. How can we feed the growing world population without destroying the planet? It can become too overwhelming to think about how we can change this, but in real terms there are lots of small things that we can do to help make a big difference. At an individual level we can recycle and reuse the things we buy, and we can help nature by growing our own food in a way that does not damage the environment. Our gardens are organic. That means we use no chemicals or pesticides. We use only natural fertilisers such as seaweed or fish, blood and bone. We plant insect friendly native plants wherever possible to encourage bees and other pollinators. We use watering cans rather than hoses to reduce the amount of water we need and we compost our plant waste. We grow all our crops from seed.

Our food crops go to the College Kitchens for use in the Culinary department, so our crops are grown, processed and eaten on the premises! Any food waste in the college can be processed in The Rocket Composter and turned into nutritious compost for the garden. As we collect seed from our plants, we are aiming to become as self sufficient as possible. Have a look at the video below to find out more about how we can create more sustainable ways of food production.



 Watch Videos - The future of food production ?



It is clear that we need to change our outlook in terms of how we produce food. The examples in the video show that you can start small and become influential through success. Our City Garden can demonstrate that you can grow food in Urban areas. Just imagine if every building had to have a garden instead of a car park? During WW2, every available foot of land was used for food production. Most people who had any kind of outdoor space grew their own fruit and veg, because they couldn't get it any other way. For people living in places where outdoor space was limited, the allotment proved a big success. These still continue today and are proving so popular that there are usually waiting lists to get one.

Our college gardens provide us with the opportunity to grow a range of fruit and veg crops and do our bit towards sustainability. In the next section you will see how to do this safely.

## 3. METHODOLOGY

For this small-scale research I have used an interpretive research design, which allows for a vision of research as a process of “moving continuously forward with a question, to which there was no perfect answer” (O’Keefe 2021: 49). This paradigm “views the world as open to interpretation” (Shambrook & MacKeen 2021: 13) and “interpretive researchers see their analysis as a matter of providing an understanding rather than providing something that is an objective, universal truth” (Denscombe 2014: 236). This paradigm is particularly useful when engaging with ASN students, who may find it difficult to articulate their thoughts and feelings. A degree of trust is essential (Bhattacharjee 2012) for the participants to feel confident in speaking to the researcher. All the participants have worked with me and developed trust and rapport, which helps to destress the situation. It is also vital that power relationships are acknowledged (Bernstein 1974) and further the researcher must be aware of their own “social background, likes and dislikes, preferences and predilections, political affiliations, class, gender and ethnicity”. (Thomas 2013:109).

### 3.1. Ethical Considerations

It is of vital importance that research with ASN students is conducted according to all ethical protocols, including informed consent and anonymisation of participants. Due to our small class sizes and timetabled guidance, we are also able to develop and maintain relationships with the students that allow for informed consent with this group of students (Cameron and Murphy 2007).

### 3.2. Recruitment

The participants were recruited from the students (9) and staff (3) of the City Works programme. As one staff member also has ongoing relationships with urban gardens in the city, it was decided to include community gardeners as well to investigate the value of education in their work.

### 3.3 Questionnaire

A questionnaire was distributed to the students, using Google Forms. The questionnaire was designed to be easy to understand (Denscombe 2014: 166-7) and aimed to capture student's attitudes as opposed to trying to influence them.

### 3.4. Semi-structured interviews

Semi-structured interviews have been shown to be a successful way of gathering information from neurodiverse people (Krogh and Lindsay, 1999). As neurodiverse people often have difficulties in terms of processing information (Cridland, Caputi and Magee, 2015) it is important for the interviewer to be able to go back and check for understanding, re-word questions if necessary and follow what may at first seem tangential information. A low arousal, non-judgmental approach is helpful, to create a less stressful atmosphere (Thomas, 2013). Six open-ended, non-biased questions were used (Charmaz, 2006) (see Table 1).

**Table 1.** Interview Questions

1. How long have you been involved (in the course/project)?
2. What do you understand now that you didn't before (you started the course/project)?
3. How has it benefitted you?
4. Do you think it has benefitted others?
5. What skills have you gained?
6. What do you think the future will be like?

### 3.5 Data Analysis

Braun and Clarke's thematic analysis (2006) was implemented. Themes were created from the accumulated data. The themes developed from the responses, and not from a particular theoretical basis. While similar to grounded theory, it differs in not relying on a theoretical/epistemological basis. It was important to let the data "speak for itself" in order to allow the meaning of the participants' views to be unencumbered by any predetermined goals or biases of the researcher.

## 4. FINDINGS

Responses from the questionnaires and the interviews will be presented here.

### 4.1. Themes

Themes developed from the interviewee's responses and can be seen in Table 2 below.

**Table 2.** Themes

<b>Practical work</b>	<ul style="list-style-type: none"> <li>• <b>Concrete</b></li> <li>• <b>Physical</b></li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• <b>Skills</b></li> <li>• <b>Knowledge</b></li> <li>• <b>Interpersonal</b></li> </ul>
<b>Confidence</b>	<ul style="list-style-type: none"> <li>• <b>Gains for students from social interaction</b></li> <li>• <b>Surpassing expectations of what they thought they could achieve</b></li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>• <b>Tool for organising</b></li> <li>• <b>Increasing understanding of each other</b></li> </ul>
<b>Imagining the future</b>	<ul style="list-style-type: none"> <li>• <b>Apprehension from many students</b></li> <li>• <b>Concerns regarding institutional structures</b></li> <li>• <b>Optimism about what is possible</b></li> </ul>

#### 4.1.1. *Practical work*

Necessity of practical work was a key theme among the respondents. The concrete nature of the work was seen as appealing to a wide range of participants, particularly those who often struggle to understand abstract concepts.

“In the practical realm, working in the gardens, it's got a beginning, a middle, and an end, the tasks are practical, there's a rhythm to it, a cycle to it. The students understand what it is. It's very concrete, so it appeals to a lot of neurodiverse people” Participant 9, Lecturer

The physical nature of the work also emerged as an important factor in the success of the course.

“I feel a lot happier, and doing the gardening and going outside instead of writing. Something physical instead of having to write more.” Participant 4, student

“[The students] see themselves in a different light. They can actually be quite a physical person who...is capable of a lot more than they've ever done before, or maybe they were embarrassed to try it before... They may have some leadership qualities they didn't know they have, because that's not the role they seen themselves in...And it's often a gateway...because a lot of times when you're doing gardening and it is quite physical and you have to do it collaboratively...somebody has to hold the bag, the other person has to shovel the dirt in, so you're both in the same space and...people end up talking to people that they may not have talked to before in the class and...sometimes they end up becoming friends. I've seen that quite a few times. It's a good way to get people to socialize unconsciously and it makes it a lot more stress-free. It's not forced.” Participant 11, classroom assistant

“One student really struggled due to dyspraxia, but his peers suggested he make a big red dot where he was to drill and this helped considerably...All students were fully

independent in this by the end of the term. One student still required supervision.”  
Participant 9, lecturer

#### 4.1.2. Learning

For both teaching staff and students, the learning process was described as dynamic and robust. Most questionnaire respondents rated the course highly.

The course allowed teaching staff to develop a process in which a dynamic remained between them and the students.

“I learn all the time from the students. And I think it’s a continual loop, so it’s benefited me because it keeps my ideas vibrant and I come away feeling quite energized.”  
Participant 10, Lecturer

Many of the students have struggled with aspects of academic learning and the work in the garden has provided them with opportunities to improve their abilities, particularly through the NPA in Horticulture. The garden becomes a vehicle for expanding student learning.

“It’s helped me more about learning a lot. I couldn’t read and write and spell and that’s why I wanted to learn more.” Participant 7, student

ASN students who come on to SEP courses have often had particular challenges in mainstream education, often stemming from their own issues (e.g. processing difficulties) and external issues (such as bullying) (MacKeen 2017: 14). Specialists working with these students need to be aware of these challenges and sensitively anticipate the difficulties these issues cause for student learning. Outdoor learning can provide a space that does not have the negative associations of the traditional classroom.

“I think it’s really good to...be patient and let people find their feet with outdoor learning because a lot of times it’s the first time that...they’re doing physical things and they don’t see themselves in that way, but if you let them do it and take their time with it, they can see themselves in a different light, because sometimes they’re actually really good at these things and it’s just a different way of seeing themselves. And that’s, that’s really good to see, and I think it’s a really good learning outcome.” Participant 11, classroom assistant

There is scope for bringing learning out of traditional educational institutions and into communities. For instance, Yorkhill Greenspaces has a member who is an entomologist, and working with local schoolchildren they have identified 1100 new species of insects. The learning process for this group is ongoing and creates an important connection between the learner and the community:

“The actual gardening side, and the planting side, biodiversity and all of that side of that is all just been me learning all of that cos it wasn’t something that I was ever – I did pottering about in the garden and in fact when I went along to that first meeting...I was thinking I was gonna learn a wee bit about it. But I think with all these things you need to have lots of different skills. So there are people who are expert gardeners, social media. So we’ve all got our role to play.” Participant 12, Yorkhill Greenspaces

**Figure 6.** Outdoor learning class on soil, 4th floor garden (photograph by D. MacKeen, Glasgow, 2022)



#### 4.1.3. Confidence

The City Works students spoke of an increase in confidence.

“I don't really like to go outside much, you know. Cos in high school everyone went outside and communicated, I was never really that kind of person, so this course kind of, you know, gives me a bit more skills in speaking to people and making friends and contacts.” Participant 6, student

This increase in confidence was noted by the teaching staff:

“Initially, no one had any belief that they could make anything, or any idea of how to go about it. They lacked physical confidence, some due to dyspraxic type difficulty, but the majority because they had no experience of using their physical body other than for day to day living. Most of the group were not ‘allowed’ to take part in activities that

parents/carers felt were too challenging, so expectations of their capabilities were very low.” Participant 9, lecturer

The importance of this rise in confidence cannot be overstated in terms of ASN students and it is important to note the nature of their own understanding of themselves:

“[Gardening] can give you confidence. It can bring out skills that you didn't know you had and it can...turn you from a consumer to producer.” Participant 11, classroom assistant

This growth of understanding of oneself was also noted by community gardeners, who all spoke of having to take on new challenges (e.g., organising groups, using technology to maintain accounts, developing skills in horticulture) which they had not imagined they were capable of before they became involved.

**Figure 7.** Students using student-designed compost sifter (photograph by D. MacKeen, Glasgow, 2022)





#### 4.1.4. Community

Staff noted that students became engaged with each other in meaningful ways through practical tasks, which helped alleviate much of the social anxiety that the traditional classroom had often entrenched.

“It takes away some of the anxieties of social situations because you're doing things. Conversation can come a lot more naturally and you...have to work together. So conversation usually comes out of that and friendships too.” Participant 11, classroom assistant

For community gardeners, the garden spaces became a vehicle for social interaction that was not happening normally.

“We had an event a few weeks ago there, up at Yorkhill Park, and with all our events anyone can pop in and join us. There were two students who were Chinese students and they never had the opportunity, they've been here for two years, most of their stuff is done online, they're living in residencies and they never had a chance to meet, talk to anyone in the community.” Participant 12, Yorkhill Green Spaces

Important connections between individuals within their own communities developed from these interactions and highlight potential difficulties when these connections are not developed.

“But I think there's all the other things that happen, the relationships, the friendships, and the...learning as well, that people learn from each other. And then I was thinking about it...one of the group had, COVID...a few months ago and his flatmate wasn't around. So he was kind of totally on his own and he had nobody else, but we've got...a WhatsApp group, and everyone was...going around and taking things around and making sure... and then another one in the group said to me, like...if nothing else good comes of this, I've met [this person] through that now.” Participant 13, Anderston Green Spaces

“It's not just one person that benefits out of it, it's everybody that comes.” Participant 14, G3 Growers

#### 4.1.5. Imagining the future

An important aspect of active citizenship is the ability to recognise one's own agency. Therefore it is vital that individuals, particularly marginalised people such as ASN students, see their own ability to create positive change. However, many students found it difficult to articulate how they think the future will be. From the questionnaires, half of the respondents felt they could change things for the better and half did not. In the questionnaire, one student commented “Having new skills and increased knowledge empowers me to use for work opportunities and leisure”, while another stated “I don't think I could change things because not a lot of people listen and don't think I have the courage to change anything.” Doubts were also felt by another student in an interview:

“I'm a very cynical person so I don't really see my future being that good. I need [National] 5 English but I never was very good at English, everyone was going ahead of me, I was the one stuck behind cos I'm a slow learner when it comes to English and so I don't really see my future as being nice. I would like my job to be creative. I'm a lazy person and more so since Covid happened and the only thing I find passion in is

in creativity. I would need to go somewhere to do that cos in my house I'm way too comfortable." Participant 6, City Works student

The course material on sustainability had a noticeable effect on the students' views of the possibility of change. Participant 9 (lecturer) noted that "[s]tudents who initially had no views on climate change, were now able to talk about what might happen, and what they could do as an individual. Some argued that things wouldn't change, but this was progress from an initial shrug of the shoulders and 'who cares'."

City Works staff believed in the possibilities for a positive future but were concerned about the barriers created by neoliberalism:

"And I'd like to think that in the future we'll still recognize that everybody has an important part to play despite what their background is...I'm not sure because I feel there's still this...kind of push towards valuing things over people rather than people over things." Participant 10, Lecturer

"I think [the future] has the potential to be really good if people are allowed to reach their potential. But I think sometimes that's stymied by...like sort of corporate things don't see the big picture and they kind of...instead of letting things progress sometimes put a stop to it because it's...a way of ... normal people getting together and seeing solutions that don't involve big business. And...I think sometimes when that's seen and they're alerted to it you know they can put an end to it. I think people do have a lot of potential, especially when they get together and there's...lots of things that could change. It could change for the better and especially concerning... climate change...but people have to be allowed to do it and there needs to be more freedom to do it." Participant 11, classroom assistant

Community gardeners were optimistic about the possibilities for bringing communities together to effect change:

"When we had the COP26, just seeing all the young people, how much more aware they were than our age group. So I feel really hopeful that the Council and various bodies are looking at the importance of it. So there's funding available, there is learning available and things like that so I think the fact that it's been recognised as a necessity." Participant 12, Yorkhill Growers

## 5. DISCUSSION AND CONCLUSIONS

This article aimed to assess the value of urban gardening as a teaching tool for ASN students and the wider community. For ASN students, innovative solutions are needed to re-engage their interest in education. The students involved in City Works have found the course valuable in terms of their educational growth and their understanding of themselves. The combination of practical work, formal and informal education provides a meaningful pathway for students who have been marginalised and less successful in mainstream education. It also shows potential as a way to engage the wider community in an educational project that could further the issue of social justice.

### 5.1 Spatial Justice

The issue of spatial justice arises from the use of urban gardening. For marginalised groups like ASN students, their experience of space is mediated by their "disability". Gleeson (1999: 18-24) notes that while the "social model" of disability (which views disability as a result of a society that is "constructed by and in the interests of non-impaired people") is now claimed to be the dominant view, as opposed to the "medical model" (which views disability as due to the

individual's lack of "normality"), it is the medical model which holds sway over "official definitions". In contrast to both the medical and social models, Gleeson (1999: 24-27) proposes an historical-materialist model which sees disability as a form of "oppression" caused by capitalism that "[structures] the social understanding and experience of impairment".

For the wider community, the issue of spatial justice is one of access and ownership. Cities like Glasgow have witnessed a "post-industrial" turn that has seen "regeneration" since the post World War II period. After the war, Glasgow faced a crisis of over-crowding, with many residents living in poor-quality tenements (Wright 2021: 977), in an atmosphere of economic decline (Fyfe 1996: 389). In response, urban planners used a program of "creative destruction" (Fyfe 1996: 387), resulting in the displacements of communities.

Urban agriculture has become a vehicle for community organising and the reclamation of space (Certoma, Sondermann & Noori 2019, MacKeen 2011). There is a danger of urban agriculture becoming co-opted by neoliberal aims (van Holstein 2020), leading to a "privatisation of the urban realm" (Tornaghi 2014:553), as noted by one community gardener:

"There are initiatives in the council where they are keen to be supporting free spaces and green space work. It sort of annoys me that...they do...because it takes the burden off them. And they're not actually doing the job that they should be doing." Participant 13, Anderston Green Spaces

However, for participants who are aware of these challenges it poses a viable mode of community engagement. It can become a way of reimagining the city on the terms of the people living in it, bringing together networks of people exercising a "right to the city" (Soja 2014: 244). Its potential can be hampered however by negative perceptions (Eizenberg 2019: 162), and the development of an educational approach could create a valuable corrective.

## 5.2 Educational challenges and opportunities

In Scotland, the educational strategies offered to ASN students tend to emphasise inclusive settings, with questionable success (Lyndsay, Proulx, Scott et al 2014), and high levels of anxiety, especially for neurodiverse students (Sciutto, Richwine, Mentrikoski & Niedzwiecki 2012). Programs to transition students into mainstream settings that rely on social skills training can be successful (Lawrence 2010) but it is important to note that students sometimes find this approach less than engaging (Barnhill 2014: 10).

Lecturers on City Works noted that the expectations of students were often lowered by a reluctance to be challenged and that this was often reinforced by institutions.

However, the clear rise in confidence for students who have been challenged to see themselves in a different way, being physical and working collaboratively, points to educational opportunities for ASN education.

"Not everybody who works in the garden is going to end up with a career in gardening, but it's sort of planting the seed. And they may come back to it even later in life." Participant 11, classroom assistant

The Eco-Capabilities project also noted a rise in confidence, which they termed "autonomy". The authors noted that the rise in confidence "seemed particularly acute for some children who found it more challenging to actively participate in traditional classroom environments". A teacher noted that students who "aren't as academically astute as others, and would struggle..." now "absolutely flourish". (Walshe, Moula & Lee 2022: 9). The project also noted a rise in relatedness between students and the natural environment. There was a rise of "ownership" of the garden spaces "which was vital in increasing children's autonomy and agency" which led to a "pro-environmental identity" (Walshe, Moula & Lee: 18). This echoes our findings, and points to a potentially rich educational alternative for neurodivergent students and others have struggled with traditional classroom settings.

Furthermore, if links are made between these marginalised students and community gardening groups, a new educational paradigm appears, one in which barriers such as that between formal and informal education can be reduced. The understanding of the need to learn about and tackle the climate crisis, for instance, can move from classrooms to community gardens and from there to the wider community in which these spaces are situated. If a more formal geographical approach became part of the City Works curriculum, perhaps these students could become educational ambassadors to community gardens.

### 5.3 Recommendations

In order to further develop the possibilities of this educational model, several recommendations follow.

Firstly, it is important to recognise the value of outdoor education in confidence building. This is obviously important for ASN students but the potential use as a community building tool is also promising. The opportunity for informal learning allows for activities such as urban gardening to be a vehicle for education and this can mean that individuals who have had negative associations with more formal institutional arrangements could be less resistant. Finally, as we are still dealing with the COVID-19 pandemic, outdoor education offers the possibility of a safer “classroom” which could mean less interruption to the learning process. While recognising the usefulness of informal learning to re-engage disaffected learners, it is important to seek out opportunities to bring in powerful disciplinary knowledge (PDK), and the PDK of geography would appear to fit in well with outdoor education in general and urban gardening in particular. As humanity struggles with the climate crisis, and innovative solutions for problems of food insecurity are sought, a more robust geographical knowledge poses the possibility of an empowering learning experience. Furthermore, in an earlier small scale research project, it was found that students became more positive about the future and their ability to change it after having gained geographical knowledge (MacKeen 2019, MacKeen 2017: 74). It is therefore worthwhile investigating if geographical knowledge would improve this feature of the City Works student experience.

Students armed with this knowledge, as well as their understanding of urban gardening, could serve as useful educational ambassadors for community gardeners, and this in turn could help break down barriers between these two groups, ideally reducing prejudices on both sides and increasing relatedness. The learning developed between both could then be shared with the wider community, via open days, presentations, videos and social media.

Finally, it is proposed that this work is further developed with educators, geographers and ASN specialists. Research projects involving all of these stakeholders could be organised in order to determine how outdoor learning, informal learning and the PDK of geography could be used with a variety of different groups in order to increase understanding of the climate crisis, urban issues and to improve relationships between individuals within communities, through a deeper understanding of these vital issues.

### ACKNOWLEDGEMENTS

The author wishes to thank staff and students from the City Works course, as well as the community gardeners, for their participation in this study.

### REFERENCES

- Allan, J. (2008). Inclusion for all?. In T.G. K. Bryce & W.M. Humes (ed.). *Scottish education: Beyond devolution*, (pp. 701-710). Edinburgh: Edinburgh University Press.
- Armstrong, D., Armstrong, A. C., & Spandagou, I. (2011). Inclusion: by choice or by chance? *International Journal of Inclusive Education*, 15(1), 29–39. <https://doi.org/10.1080/13603116.2010.496192>

- Barnhill, G. P. (2014). Supporting Students With Asperger Syndrome on College Campuses: Current Practices. *Focus on Autism and Other Developmental Disabilities*, March (online), 1–13. <https://doi.org/10.1177/1088357614523121>
- Bernstein, B. (1974) *Sociology and the sociology of education: a brief account*. J.Rex, (ed.). London: Routledge and Kegan Paul.
- Bhattacharjee, A. (2012) *Social Science Research: Principles, Methods, and Practices*. Scholar Commons. Retrieved from: [http://scholarcommons.usf.edu/oa\\_textbooks/3](http://scholarcommons.usf.edu/oa_textbooks/3)
- Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3:2: p.77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cameron, L. and Murphy, J. (2007) Obtaining consent to participate in research: The issues involved in including people with a range of learning and communication disabilities. *British Journal of Learning Disabilities*, 35 (2): 113–120. <https://doi.org/10.1111/j.1468-3156.2006.00404.x>
- Certoma, C., Sondermann, M., & Noori, S. (2019) Urban gardening and the quest for just uses of space in Europe. In C. Certoma, M. Sondermann & S. Noori (Eds) *Urban gardening and the struggle for social and spatial justice* (1st edition, pp 1-21). Manchester: Manchester University Press. <https://doi.org/10.7228/manchester/9781526126092.003.0001>
- Charmaz, K. (2006) *Constructing Grounded Theory: A Practical Guide through Qualitative Data Analysis*. London: Sage
- Cramp, A. (2012) Empowering ‘non-traditional’ students in the UK: feedback and the hidden curriculum. In T.N. Basit & S Tomlinson (Eds) *Social inclusion and higher education*. Bristol: Bristol University Press.
- Cridland, E.K., Jones, S.C., Caputi, P., Magee, C.A., (2015) Qualitative research with families living with autism spectrum disorder: Recommendations for conducting semi-structured interviews. *Journal of Intellectual and Developmental Disability*, 40 (1), 78-91. <https://doi.org/10.3109/13668250.2014.964191>
- Curriculum Review Group. (2004). *A Curriculum For Excellence*. Edinburgh. Retrieved from <http://www.gov.scot/Publications/2004/11/20178/45862>
- Denscombe, M. (2014) *The Good Research Guide* (fourth edition). Maidenhead, UK: Open University Press.
- EIS (2019) *Additional Support for Learning in Scottish school education: Exploring the gap between promise and practice*. Glasgow [online], Available at <https://www.eis.org.uk/Content/images/education/ASN/ExploringTheGap.pdf>
- Eizenberg, E. (2019) The foreseen future of urban gardening. In C. Certoma, M. Sondermann & S. Noori (Eds) *Urban gardening and the struggle for social and spatial justice* (1st

- edition, pp 154-165). Manchester: Manchester University Press.  
<https://doi.org/10.7228/manchester/9781526126092.003.0010>
- Fyfe, N.R. (1996) Contested visions of a modern city: planning and poetry in postwar Glasgow. *Environment and Planning A*, 28: 387-403.
- Freire, P. (2000). *Pedagogy of the oppressed*. London: Continuum International Publishing Group.
- Garcia-Alvarez, D. & Arias-Garcia, A. (2022). Creating European citizens through citizenship, geography, and history education: a temporal and regional analysis of the Spanish curriculum. *European Journal of Geography*, 13 (1): 1-21.  
<https://doi.org/10.48088/ejg.d.gar.13.1.1.21>
- Gleeson, B. (1999). *Geographies of disability*. London: Routledge.
- Harvey D (2003). The right to the city. *International Journal of Urban and Regional Research*. 27:4, 939-941. <https://doi.org/10.1111/j.0309-1317.2003.00492.x>
- Higgins, P. & Christie, B. (2018) Learning for Sustainability. In T.G.K. Bryce, W. M. Humes, D. Gillies, A. Kennedy, J. Davidson, T. Hamilton, G. Head, I. Smith (Eds) *Scottish Education* (5th edition, pp. 554-564). Edinburgh: Edinburgh University Press.
- Jacobs, S. (1973). Community action in a Glasgow Clearance Area: Consensus or conflict? *The Sociological Review*, 21 (1): 165-183
- Kraftl, P. (2014). What are alternative education spaces – and why do they matter? *Geography*, 99 (3): 128-138. <https://doi.org/10.1080/00167487.2014.12094406>
- Krogh, K. and Lindsay, P. (1999) Including people with disabilities in research: implications for the field of augmentative and alternative communication. *Augmentative and Alternative Communication*, 15: 222–233
- Lambert, D., Solem, M., & Tani, S. (2015). Achieving Human Potential Through Geography Education: A Capabilities Approach to Curriculum Making in Schools. *Annals of the Association of American Geographers*, 105(4), 723–735.  
<https://doi.org/10.1080/00045608.2015.1022128>
- Lawrence, C. (2010). *Successful School Change and Transitions for the Child with Asperger Syndrome: A Guide for Parents*. London: Jessica Kingsley Publishers.  
<https://doi.org/10.1080/02643944.2011.550137>
- Lindsay, S., Proulx, M., Scott, H., & Thomson, N. (2014). Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms. *International Journal of Inclusive Education*, 18(2), 101–122.  
<https://doi.org/10.1080/13603116.2012.758320>
- MacKeen, D. (2019) Geography for Students with a Social Difference. *Research in Geographic Education* 21(1), 45-60  
[https://www.researchgate.net/publication/340923618\\_Geography\\_for\\_Students\\_with\\_a\\_Social\\_Difference](https://www.researchgate.net/publication/340923618_Geography_for_Students_with_a_Social_Difference)

- MacKeen, D. (2017) Broadening Horizons: Using a GeoCapabilities approach to support students with a social difference (unpublished Master's thesis) University College London, London.  
[https://www.researchgate.net/publication/327931965\\_MA\\_in\\_Geography\\_Education\\_Institute\\_of\\_Education\\_Broadening\\_horizons\\_Using\\_a\\_GeoCapabilities\\_approach\\_to\\_support\\_students\\_with\\_a\\_social\\_difference](https://www.researchgate.net/publication/327931965_MA_in_Geography_Education_Institute_of_Education_Broadening_horizons_Using_a_GeoCapabilities_approach_to_support_students_with_a_social_difference)
- MacKeen, D. (2011). Making a Way Out of No Way. From Glasgow to Detroit: Urban Gardening and Community Building. 20 pages. Glasgow: Discussion paper of the Peter Gibson Memorial Fund.  
[https://www.academia.edu/3825978/Glasgow2Detroit\\_report\\_v2](https://www.academia.edu/3825978/Glasgow2Detroit_report_v2)
- Massey, D. (1994). A Global Sense of Place. In Space, Place, and Gender (NED-New edition, pp. 146–156). University of Minnesota Press.
- Maude, A. (2016) What might powerful geographical knowledge look like? *Geography*, 101(2): 70-76. <https://www.tandfonline.com/doi/abs/10.1080/00167487.2016.12093987>
- OECD (2021), Scotland's Curriculum for Excellence: Into the Future, Implementing Education Policies, Paris: OECD Publishing, <https://doi.org/10.1787/bf624417-en>
- OECD (2015) Improving Schools in Scotland: An OECD Perspective. Paris: OECD Publishing.
- O'Keefe, M. (2021) I found my tribe online: belonging in the context of precarity. In M. Savva & L.P. Nygaard (Eds.) *Becoming a Scholar: Cross-cultural reflections on identity and agency in an education doctorate* (pp 43-57). London: UCL Press.
- Powell, L. & Mcgrath, S. (2014). Exploring the Value of the Capability Approach for Vocational Education and Training Evaluation: Reflections from South Africa. *Revue internationale de politique de développement*. 5. 10.4000/poldev.1784.
- Price, A. (2015) Improving school attendance: can participation in outdoor learning influence attendance for young people with social, emotional and behavioural difficulties?, *Journal of Adventure Education and Outdoor Learning*, 15:2, 110-122, <https://doi.org/10.1080/14729679.2013.850732>
- Priestley, M., & Biesta, G. (2013). Introduction: The New Curriculum. In M. Priestley & G. Biesta (Eds.), *Reinventing the Curriculum: New Trends in Curriculum Policy & Practice* (pp. 1–12). London: Bloomsbury Academic.
- Priestley, M., Biesta, G., & Robinson, S. (2013). Teachers as Agents of Change: Teacher Agency and Emerging Models of Curriculum. In M. Priestley & G. Biesta (Eds.), *Reinventing the Curriculum: New Trends in Curriculum Policy & Practice* (pp. 187–206). London: Bloomsbury Academic.
- Priestley, M. & Humes, W. (2010). The development of Scotland's Curriculum for Excellence: amnesia and déjà vu. *The Oxford Review of Education*, 36 (3): 345-361. <https://doi.org/10.1080/03054980903518951>

- Riley, K; Ellis, S.; Weinstock, W.; Tarrant, J. & Hallmond, S. (2006) Re-engaging disaffected pupils in learning: insights for policy and practice. *Improving Schools*, 9 (1): 17-31. <https://doi-org.ejournals.alumni.ucl.ac.uk/10.1177%2F1365480206061994>
- Sciutto, M., Richwine, S., Mentrikoski, J., & Niedzwiecki, K (2012). A qualitative analysis of the school experiences of students with Asperger syndrome. *Focus on Autism and Other Developmental Disabilities*, 27 (3): 177–188. <https://doi.org/10.1177/1088357612450511>
- Shambrook, L. & MacKeen, D. (2021) “It doesn’t beat the real thing”: Educational experiences of students with ASD during COVID 19. EIS Action Research Grant. EIS, Glasgow.
- Soja, E.W. (2014) Seeking spatial justice in Los Angeles. In E.W. Soja, *My Los Angeles: From Urban Restructuring to Regional Urbanization* (1st ed., pp 219-246). University of California Press.
- Sulaimani, M.F. & Gut, D.M. (2019) Hidden Curriculum in a Special Education Context: The Case of Individuals With Autism, *Journal of Educational Research and Practice* 9(1): 30–39 <https://doi.org/10.5590/JERAP.2019.09.1.03>
- Terzi, L (2005) Equality, Capability and Justice in education: Towards a Principled Framework for a Just Distribution of Educational Resources to Disabled Learners. Paper presented for the 5th International Conference o the Capability Approach: ‘Knowledge and Public Action’. Paris, 11-14 September 2005.
- Thomas, G. (2013) *How to do your Research Project*. 2nd ed. Sage: Los Angeles
- Tornaghi C (2014) Critical geography of urban agriculture. *Progress in Human Geography* 38:4, 551- 567 <https://doi.org/10.48088/ejg.d.gar.13.1.1.21>
- Walshe, N., Moula, Z., & Lee, E. 2022. Eco-Capabilities as a Pathway to Wellbeing and Sustainability. *Sustainability* 14(6): 1-24. <http://dx.doi.org/10.3390/su14063582>.
- Wright, V. (2021) ‘Housing problems...are Political Dynamite’: Housing disputes in Glasgow c. 1971 to the present day. *Sociological Research Online*, 26 (4): 976-988.



## **Geography for Students with a Social Difference**

**Donald L.D. MacKeen**  
*City of Glasgow College*

*Accepted January 10, 2020*

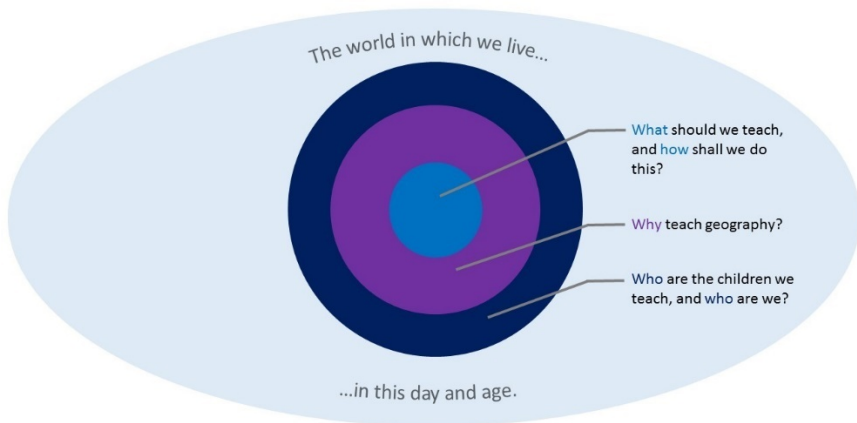
### **Abstract**

This article examines how the GeoCapabilities approach to teaching geography can be applied to Additional Support Needs education in Scotland, in particular for students with Asperger syndrome (AS). GeoCapabilities is outlined and considered in the wider context of current educational curricular reforms. The educational challenges and opportunities of students with Asperger syndrome are briefly described and results from small scale research conducted with a group of students with AS who were taught using GeoCapabilities is presented. Finally, the wider implications of using this approach are discussed.

**Keywords:** Geography education, GeoCapabilities, Asperger syndrome, Additional Support Needs, Curriculum for Excellence

### **Introduction**

This article will discuss how the GeoCapabilities approach (Lambert, Solem & Tani, 2015) to teaching geography can be applied to Additional Support Needs (ASN) education in Scotland (known as Special Educational Needs (SEN) in England & Wales), specifically for students with Asperger syndrome (AS). I am a teacher in Glasgow and encountered the GeoCapabilities approach during its development (2014-17). The article will outline the GeoCapabilities approach, discuss the particular profile of students with AS, and then describe small scale research for a Masters dissertation which looked at a case study of one group of students with AS who were taught using this approach.



**Figure 1.** A capabilities approach (according to [www.geocapabilities.org](http://www.geocapabilities.org)). The context is ‘this day and age’. We begin with questions about who the students are we teach, and then why teach them geography. Only then do we select what to teach and how to teach it.

## GeoCapabilities

The GeoCapabilities approach (Lambert, Solem & Tani 2015) emphasises knowledge and values in the teaching of geography. Taking its cue from the Capabilities approach of the welfare economist Amartya Sen and the philosopher Martha Nussbaum (Gaspar 1997), GeoCapabilities prompts us to ask *why* anyone should be taught geography: is it inherently valuable? Can it provide people with tools that *empower* them, providing an aid to navigate life?

Young people in general, and people with AS in particular, are expected to find their way in a changing world often perceived to be in crisis (Sperber 2013, Médecins Sans Frontières 1996). These crises – economic, environmental, demographic – have formed some of the context which has prompted governments the world over to institute national curriculum reform, including Scotland’s *Curriculum for Excellence* (CfE) (Priestley 2002, Bramall & White 2000). With economic competitiveness frequently dominating government strategy curriculum reform has often appeared to stress outcomes in terms of ‘21<sup>st</sup> century skills’ at the expense of subjects as David Lambert (2013) outlined in the case of England. Whilst in England there has been a turn back to a knowledge led curriculum since 2010, in Scotland the principles of CfE continue, the educational emphasis being on developing skills based upon the experience of young people.

The risk is that young people are not exposed to specialist knowledge, including geographical knowledge, that can take them beyond that experience. The sociologist Michael Young (2017, 4) has related how state influence on changes to school curricula began in the 1970s at least in part due to "the collapse of the youth labour market and the expansion of those staying on at school at minimum cost." Various attempts to accommodate young people who in earlier times would have left school early led to a stark 'academic' and 'vocational' divide, with subjects like geography arguably being reserved for the more academic student and the rest being provided with skills and competences deemed suitable for the world of work (e.g. Leisure and Tourism). Michael Young and others (e.g. Young and Lambert 2014) now consider this divide to be unacceptable on social justice grounds. If geographical knowledge is believed to be an essential ('powerful') component of the curriculum for high achievers, then why was it thought to be acceptable for lower achievers to have at best only a watered-down version of this<sup>i</sup>? Young argues for 'powerful knowledge' for all because of its enabling 'power'- usefully discussed by Alaric Maude (Maude, 2016).

The GeoCapabilities approach offers the prospect of a geography curriculum for all. Following Sen and Nussbaum's capabilities approach to welfare economics, which argued that poverty is a problem because people are prevented from fully developing their human potential (and therefore should be abolished), GeoCapabilities boldly claims that young people are in a similar manner impaired from fully developing their potential if they are deprived (for whatever reason, or even unintentionally) of 'powerful disciplinary knowledge' (PDK). Real development comes through "human *empowerment*" (Lambert et al 201, 724, emphasis in original), and access to PDK derived from specialist disciplines, including geography, contributes directly to cognitive development - and the power to think - upon which intellectual empowerment depends.

Geography provides both subject knowledge and a holistic view of the world that stresses the interconnectedness of people and the planet, enabling "a unique view of the world", providing students with the tools to make sense of "complex problems" while considering connections "at a variety of scales" (Jackson 2006). Lambert (2004) points out that geography has both a *vocabulary* (e.g., rivers, seas, oceans) and a *grammar* (e.g., scale, place, space) that provides meaning to the vocabulary. The anarchist geographer Kropotkin (1978) saw geography as having three important functions: to open the student's eyes to the importance of the "natural sciences"; to show that humans are all one people; and to fight the prejudices people have of the "Other" (in the terms of his day, "the so-called 'lower races'"). It is making these kinds of claims about geography's unique attributes as a discipline that enables us to link the teaching of the subject in schools with capabilities development. We are able to say that geography offers something particular and special enough to assert that its absence in the curriculum could be seen a capabilities deprivation which gives purchase to what

Basil Bernstein (2000, 30) called the "pedagogic right" of students to specialised knowledge. As Young argued "as a matter of social equity, all young people have the right to be introduced to powerful knowledge" (Lambert et al 2015, 730).

It perhaps goes without saying that implicit in all the above is that we are assuming that the geography taught in school is of high epistemic quality. Precisely how we might define this may be the theme of another article, for it is an important question. But for now, we might simply agree that teacher agency is at the forefront of GeoCapabilities: high quality geography requires high quality teaching. Thus, returning to Scotland's Curriculum for Excellence (CfE), which stresses the wider goals of education, teachers should take into account the "role of education in affording people with intellectual, moral and existential capabilities for lifelong learning, economic and social agency in citizenship and the pursuit of personal well-being." (Lambert et al 2015). In the GeoCapabilities project teachers express their agency by carrying out a process of "curriculum making": they take a lead in developing a curriculum with the goal of human empowerment. In order to encourage this, the GeoCapabilities website ([www.geocapabilities.org](http://www.geocapabilities.org)) provides practical support and advice. In my work with students with Asperger's syndrome I have found the capabilities approach to be very supportive.

### **Methodology**

My research consisted of a case study of one group of students on the Transitions course (12 students out of a cohort of roughly 40). Using triangulation, I employed the use of questionnaires, video observation and semi-structured interviews about their experiences of education, what they thought of studying geography, and how they viewed the future. I analysed this using an integrated approach as described by J. Floersch, J.L. Longhofer, D. Kranke, and L. Townsend (2010). This paper will draw specifically on the interviews. The names of students have been anonymised. Students were fully informed of the aims of the project; their participation was voluntary and based on informed consent. This was overseen by the research tutor and was compliant with data protection legislation.

#### ***Asperger syndrome***

Firstly, what is Asperger Syndrome? (Note 1) Coined in 1981 by the psychiatrist Lorna Wing, Asperger Syndrome (AS) was a category designed to explain to parents and teachers how people of average to above-average intelligence may exhibit "autistic features", and yet "speak grammatically" and not be "socially aloof" (Wing 1981). In the 1970s Wing and her colleague Judith Gould had identified the common traits of autism: the "triad of impairments" (Wing & Gould 1997) (see Table 1).

**Table 1.** The Triad of Impairments

<b>Social interaction</b>	<b>Communication</b>	<b>Imagination*</b>
The individual can appear rude, withdrawn or odd, and become anxious in social situations.	The individual speaks in monologues and can often focus only on their area of interest	The individual engages in repetitive behaviours and may see things in an extremely black and white, right or wrong manner

\*Claire Sainsbury (2009, 33) who has AS prefers the term “flexible thinking”

People with AS are analytical thinkers (Bryson 2005). Therefore, social interaction, which is unpredictable, is challenging to understand as it is context-dependant: you would not speak to your teacher as you would to your friends or family. People with AS can also experience sensory issues differently to "neurotypical" people. Fluorescent lighting, echoey rooms, the texture of plastic chairs, school bells – all can contribute to creating an overwhelming and distracting environment for these pupils.

However, people with AS also have particular strengths due to their analytical thinking and their sensory perception. They can be highly focussed on areas of interest, and indeed many autism researchers today believe that important figures from the past may have had AS: Einstein, Wittgenstein and Lenin (Gillberg 2002, Fitzgerald 2000a, 2000b, 2000c). The Austrian doctor Hans Asperger (after whom the condition is named) noted that with the social disability came "perceptual and super-ability" (Landeweerd 2001, 209):

“In the best cases, this ability [. . .], offers the potential for a career perspective, determines the special achievements of these people, which others do not have. The ability to abstract thought is of course an advantage for scientific achievements. And indeed, under important scientists, there are many autistic personalities”.

Humphrey & Lewis (2008) estimate that there are “93,400 children and young people in the United Kingdom” with AS, therefore it is highly likely that most teachers (perhaps unwittingly) will have had experience of this particular way of perceiving the world. People often go undiagnosed, and students may be unaware of their AS, although it is likely that they are aware they are "different" to their peers.

Teachers who can develop relationships of trust have the opportunity to harness these talents, for the benefit of the student, their peers and society in general.

***The student voice***

My main role on the ‘Transitions’ course at City of Glasgow College is to provide guidance and support to students with AS (aged 16-19) who have not been successful in mainstream education. These students are often school-phobic and need to re-engage with education, and ideally move on to a mainstream course or work. The course is rooted in the idea that the students need to create their own strategies to deal with actual situations, therefore classes are used a vehicle for embedding social skills training, as well as a means for lecturers to assess the students' academic abilities.

Geography developed from my work with the students using urban gardening, which came about as a means to teach citizenship in a more practical way (see Figure 2).



**Figure 2.** Transitions students working at a community garden space

Our work in the garden encouraged discussions about how the city functions and for whom – why was the neighbourhood we worked in (the Gorbals, a working-class area of multiple deprivation) strewn with litter? Whose responsibility was it to clear it up? Could urban gardening transform the area, and how was it perceived by residents? Is the city for developers or citizens, and do citizens have a “right to the city”? This led, perhaps inevitably, to the introduction

of more formal 'geography' lessons that are now an integral part of the course (see Table 2).

**Table 2.** The Transitions course

<b>Basic information</b>	Course established in 1999. The result of work done by the National Autistic Society, the Scottish Society for Autism, parents, carers and academics. The course is designed to serve a group of young people who are often overlooked and aims to encourage them to develop their own independence in order to move on to mainstream education or work.
<b>Student group</b>	Aged 16 to 19, with a diagnosis of Asperger syndrome. Students must be independent travellers and need to be able to cope with class sizes of 10 to 12. Total student cohort of 40.
<b>Classes</b>	Full time college course (17.5 hours per week). Classes are three hours and can include geography, film & media, horticulture and core skills. Guidance is timetabled and is integral to the success of the course. Social skills training is embedded within all classes.
<b>Progression</b>	The course is successful in aiding students to make their next move. Students have gone on to study Social Science, Computing, and Arts based subjects.

These students have a unique way of looking at the world, possibly informed by a feeling of being an outsider looking in, that allows them to view the conventional with fresh eyes – something of enormous value to a world in flux. As marginalised people, it should not be surprising that many of them suffer from pervasive self-doubt and at times they could struggle to articulate themselves. They often approach problems in a dialectical way, seeing the positive in the negative. But many found geography an enlightening subject that helped them understand the world they lived in. Most importantly, it inspired them to consider new and productive ways of thinking about today's problems and possibilities for change.

***The value of geography***

The Transitions students described how understanding geography helped them to understand other people and the world they live in. These students sometimes appear disadvantaged by their different approach to life, and their different priorities. As the clinical psychologist Tony Attwood has said, they are "truth-seekers" (Gray & Attwood 1999), something which isn't always appreciated in social situations.

Having the ability to tap into a knowledge-based subject provides the students with the means to make more informed judgements about their world. Jack (MacKeen 2017, 73) stated:

If you don't know stuff about where people live, why they live there and like...the way things are built up like you don't really understand why different people are in different situations...It's hard to understand why there's lots of crime and violence in ... places like outside the city but if you think about it there's not really a way to do anything if you're outside the city so everybody's just bored they're just gonna commit crime cos there's nothing else to do really.

He went on to describe further how geography had prompted him to think more about Glasgow:

You- when you live somewhere you don't think well why - why is Glasgow here? You don't really think about that, you're just like oh this is Glasgow, it's always been here. Because you know it always has been here to you, you don't know why it's here or who built it or the reasons they built it here. But in geography you can take a step back a bit, it's next to a river, and it's on a hill and it's easy for fishing and stuff but you don't really think about that because stuff like that doesn't matter anymore. (MacKeen 2017, 72)

Through his emerging understanding of geographical concepts, Jack was able to make more sense of the problems of his neighborhood in Glasgow. Instead of a series of random, unpleasant events, he began to see patterns and gain some insight into the negative actions of others, and empathy for their condition. He has considered the “meanings” of Glasgow for himself and others and reflected upon the “quality of life” in his city (Morgan 2002, 26).

Attwood (1997, undated) has noted that there is a strong concern for social justice among people with AS and this came through in many discussions. Riley saw geography as a useful means of coming to terms with issues that confront all of us, but particularly young people:

I think when we were talking about climate change and stuff like that and like talking about how we could like help out with that. And talking about what we could do as people rather than you know as a society because I think that's the one thing we tend to think about. We tend to think singular rather than plural because we're all stuck in our own wee world and getting us to realize that it's not just us that need to do things. We need to do things as a collective. It certainly broadened horizons that way. I always knew - well not always but for quite a while I've known that we need to things as a



collective rather than as singular because otherwise nothing's gonna get done. Cos one person can't change the fate of 7 billion people. (MacKeen 2017, 67-8)

For Max, "cooperation is entirely necessary to the survival of the humanity, of the human race" (MacKeen 2017, 64) and he identified the divisions between people as a source of conflict:

I know that - well this should be obvious, but I know that there are obviously people who - who are either better off or worse than me, to people starving in poorer places like Africa, Somalia - other places like that. Or people who live in rich places like maybe uh here in Glasgow or America, anywhere else. To be honest - in all honesty I feel like, you know the whole 1% of people who are much better off than others, I feel like that's total bullshit to be honest. (MacKeen 2017, 64)

The concern for social justice is often coupled with a lack of acceptance of the idea of hierarchy. Asperger himself noted how "they treat everyone as an equal as a matter of course" (Sainsbury 2009, 56). This can be an obvious difficulty in mainstream education, and a geographical understanding can allow these students a more nuanced view of how things actually function in society and more realistic ideas of how to change it.

### **GeoCapabilities: A Different Approach to Education**

Teachers often find students with AS challenging to have in mainstream settings, as these are people who will continually ask "why?" and are not satisfied with stock answers. Furthermore, people with AS often have difficulties processing information, and this can lead teachers and peers to question their abilities or motivation. Riley described how her interest in the sciences waned because "as time went on and we were taking more and more notes, I realized that I couldn't really like keep track of it and some of it was just a bit disorienting". (MacKeen 2017, 62). While many people with AS are talented analytical thinkers, in the way that Asperger described above, they can also have difficulties taking in and understanding information, and therefore teachers should be aware of this potential "gap" between talents and abilities, which can be a source or cause of anxiety for the student.

Riley felt uncomfortable discussing controversial subjects as she "didn't feel aware of the world" and stated:

I really wanted to speak out but then I found out that sometimes what I could say could be a bit – offhand I suppose...Like it could've just caused a whole debate and just dragged everything off track.

It was important for me to be aware of trigger points for each student, as well as drawing on their talents for innovative thinking. The timetabled guidance was valuable in this respect. Creating an informal atmosphere that accepted the general lack of acceptance for hierarchy also allowed for a relaxed atmosphere in which the students could think more clearly.

For Riley, geography was not one of her favorite subjects in high school:

I didn't really have a love of it in high school cos I think it was just one of those, cos it felt necessary instead of you know you can do this for the fun of it. And this time around it still feels necessary but it's there for the fun of it as well because it's not just geography it's helping us understand the world through geography.

For Riley, geography became more engaging as a subject with clear goals, that she could see as relevant to her life, as opposed to geography as an end in itself. Thus, I wanted to move beyond the way that the subject is presented in Scottish Qualifications Authority (SQA) materials to allow the students to think more critically about the subject and how they could use and develop this knowledge. Classroom discussions could move from exploring the Highest Value Export of each country to looking at the geography of drug prohibition and then consider arguments for and against drug legalization, subjects that are of great interest to young people.

We also drew upon the work of the late Hans Rosling, ([www.gapminder.org](http://www.gapminder.org)) particularly when looking at the concept of development and considering whether the developed/developing country dichotomy is outdated. Through our discussion the students began to look more closely at not just the subject matter but debates within geography itself:

Doug: I've heard about the suggestion that how we view, how we view countries as developed or developing may be...either wrong or at least outdated and that...there are different levels of how countries developed in the...like development and under-development cos like...even countries we may see as under-developed do have advantages like Brazil...or Mexico and some parts of Europe...and certain parts of Africa. (MacKeen 2017, 69)

## Understanding Ourselves – Imagining the Future

GeoCapabilities offers the possibility for students to learn not just about the world, but about themselves, and this fits in well with the aims of not just CfE but the Transitions course specifically.

Like many young people with AS, the Transitions students have struggled with the mainstream school system. AS is a different way of thinking and being and this difference is usually seen as a deficit, or "disability". As Gleeson (1999, 25) argues in *Geographies of Disability*, capitalism "[structures] the social understanding and experience of impairment", making disability a form of "oppression". The view of disability as a deficit "continues to dominate policies and... classroom practice" (Allan 2008).

This has meant that despite their often-remarkable intellectual gifts and unique way of viewing the world, such students are people who are frequently put in a marginalized place in society. If Attwood (undated) is correct that AS is an important part of our evolutionary heritage as humans, then this marginalization is a loss not just to the affected individuals but society as a whole.

Many of the students described feeling like "outcasts" (MacKeen 2017, 59), with secondary school being particularly trying. Jack (MacKeen 2017, 61) described his experiences:

The first years that I went to school, well like the first year that I went to school, I was ok with it, but I hated it. And then the second year of school I just refused to go in and after that like I'd go to see a tutor like every week I think it was and then when I was about 13 I had to go to this thing called the support center which was just for people who for whatever reason didn't go to school but who didn't have behavioral problems if that makes sense.

The approach of the Transitions course, in contrast, is to recognize these students' particular talents, and develop them so that they are ready to move on to mainstream education or work. Geography allows us to do something other than the standard social skills training, which some students see as the "same old stuff" (Barnhill 2014, 10). It also taps into the unique way of viewing the world that is a hallmark of AS. Riley saw how the positives of AS were a "gift":

I think it's- it's -it's a gift really. It makes me see the world in a unique way that a lot of people wouldn't. It kind of, it does - it widens your perspective, when you realize that other people think differently from you and it, it kind of broadens your opinions of the world. Cos obviously there's the - obviously there's more neurotypical people out there than there are with autism and Asperger's. And you do feel like a sort of - I don't know...I don't know, it's like this sort of ...like a broadened sense of compassion.

When asked about how they view the future, the students' responses ranged from apprehensive to optimistic, but many saw how geography could help people understand the present and imagine alternatives. Max (MacKeen 2017, 69) felt that geography could help people create solutions:

I believe something like geography could help this out yes because with the lay of the land sure someone like a foreign - maybe a Native American to Spain could be learning the place around - that person if he learned or he or she learned the lay of the land, got to know the locals, all that, sure one person may not really like they could do much but that one person could change the future forever.

Jack (MacKeen 2017, 73) explained how geography could help people gain a more realistic view of the world:

If you don't know stuff about where people live, why they live there and like eh the way things are built up like you don't really understand why different people are in different situations.

He felt positive about the possibilities for people to create change (MacKeen 2017, 74):

I don't know if I can make lots of things better, like I don't know if I can change the way - I can't really change the way other people think except from by telling them the truth. But I feel like if I'm a good person and try and help other people to be good people then eventually they can do it, it's just like a chain reaction but not everyone is gonna be a good person cos it's just not in their nature. But I feel like everyone can make a change.

## **Conclusion**

This article has addressed how the GeoCapabilities approach can be used to support students with a social difference in terms of gaining knowledge and a better understanding of themselves in the world. I have argued that focusing on the PDK of geography through the GeoCapabilities approach creates possibilities for human empowerment, something which many students with AS appeared to appreciate.

The students related through their experiences, a developing grasp of geographical thinking and were able to use this growing knowledge to analyse the world and make (often inventive) judgements and pose intriguing questions. They recognised their social difference as a positive and unique way of thinking and being and were able to make connections between themselves and the wider world.

If teachers use their agency, as the GeoCapabilities approach encourages, they have in my judgement the opportunity to move beyond the standard picture of disability and recognise that the unique talents and perceptions of students with social differences can become resources for the classroom, helping their peers to see the world in a different way. The value of geography as a subject can then become clear, as a means to achieve Kropotkin's vision of a more human and just society by, as Riley puts it, "broadening horizons".

### **Acknowledgement**

I am grateful for David Lambert's support and encouragement in writing this article.

### **NOTES**

1. The term Asperger syndrome has become contentious, owing to its removal from the Diagnostic & Statistical Manual, Fifth Edition in 2013 and its replacement with the term "Autistic Spectrum Disorder". Furthermore, research by Herwig Czech (2018) argued that Hans Asperger was complicit in Nazi atrocities. This has been challenged by Dean Falk (2019) who states that "aspersions that have been cast on Hans Asperger's reputation are selective, biased, and often inaccurate". The term remains in use in Scotland at present.

### **References**

- Allan, J. (2008). Inclusion for all?. In T.G. K. Bryce & W.M. Humes (ed.). *Scottish education: Beyond devolution*, (pp. 701-710). Edinburgh: Edinburgh University Press.
- Attwood, T. (n.d.). About Asperger's. *Tonyattwood.com.au*. Retrieved from <http://www.tonyattwood.com.au/about-aspergers>
- Attwood, T. (1997). *Asperger's syndrome: A guide for parents and professionals* (1st ed.). London, U.K: Jessica Kingsley Publishers. Retrieved from [https://books.google.com/books?hl=en&lr=&id=rkMnc\\_QBMTUC&pgis=1](https://books.google.com/books?hl=en&lr=&id=rkMnc_QBMTUC&pgis=1)
- Barnhill, G. P. (2014). Supporting students with Asperger Syndrome on College Campuses: Current Practices. *Focus on Autism and Other Developmental Disabilities*, 31(1), 3-15. <https://doi.org/10.1177/1088357614523121>
- Bernstein, B. (2000). *Pedagogy, symbolic control and identity*. Oxford: Rowman and Littlefield.

- Bramall, S., & White, J. (2000). Will the new national curriculum live up to its aims? *Impact*, 6, vii-51. <https://doi.org/10.1111/j.2048-416X.2000.tb00041.x>
- Bryson, S. E. (2005). The autistic mind. In M.L. Bauman & T. L. Kemper (Eds.), *The Neurobiology of Autism* (2nd ed., pp.34-42). Baltimore: The Johns Hopkins University Press
- Czech, H. (2018). Hans Asperger, national socialism, and “race hygiene” in Nazi-era Vienna. *Molecular Autism*, 9(29). doi:10.1186/s13229-018-0208-6
- Falk, D. (2019). Non-complicit: Revisiting Hans Asperger’s career in Nazi-era Vienna. *Journal of Autism & Developmental Disorders*, <https://doi.org/10.1007/s10803-019-03981-7>
- Fitzgerald, M. (2000a). Did Ludwig Wittgenstein have Asperger’s syndrome? *European Child & Adolescent Psychiatry*, 9(1), 61–65. <https://doi.org/10.1007/s007870050117>
- Fitzgerald, M. (2000b). Letters to the editor Ludwig Wittgenstein: Autism and philosophy. *Journal of Autism & Developmental Disorders*, 30(6), 621–622.
- Fitzgerald, M. (2000c). Letters to the editor Einstein: Brain and behavior. *Journal of Autism & Developmental Disorders*, 30(6), 620–621.
- Floersch, J., Longhofer, J. L., Kranke, D., & Townsend, L. (2010). Integrating thematic, grounded theory and narrative analysis. *Qualitative social work: Research and practice*, 9(3), 407–425. <https://doi.org/10.1177/1473325010362330>
- Gasper, D. (1997). Sen’s capability approach and Nussbaum’s capabilities ethic. *Journal of International Development*, 9(2), 281–302. [https://doi.org/10.1002/\(SICI\)1099-1328\(199703\)9:2<281::AID-JID438>3.0.CO;2-K](https://doi.org/10.1002/(SICI)1099-1328(199703)9:2<281::AID-JID438>3.0.CO;2-K)
- Gillberg, C. (2002). *A guide to Asperger syndrome*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511543814>
- Gleeson, B. (1999). *Geographies of disability*. London: Routledge.
- Gray, C., & Attwood, T. (1999). The discovery of “aspie” criteria. Retrieved from [http://www.tonyattwood.com.au/index.php?option=com\\_content&view=article&id=79:the-discovery-of-aspie-criteria](http://www.tonyattwood.com.au/index.php?option=com_content&view=article&id=79:the-discovery-of-aspie-criteria) (Last accessed 12 August 2017).
- Humphrey, N., & Lewis, S. (2008). ‘Make me normal’. *Autism*, 12(1), 23–46. <https://doi.org/10.1177/1362361307085267>
- Jackson, P. (2006). Thinking geographically. *Geography*, 91(3), 199–204.
- Kropotkin, P. (1978). What geography ought to be. *Antipode*, 10–11(3-1), 6–15. <https://doi.org/10.1111/j.1467-8330.1978.tb00111.x>

- Lambert, D. (2004). The power of geography. Retrieved from [www.geography.org.uk/download/NPOGPower.doc](http://www.geography.org.uk/download/NPOGPower.doc) (Last accessed 17 July 2017).
- Lambert, D. (2013). Geography in school and a curriculum of survival. *Theory and Research in Education*, 11(1), 85–98. <https://doi.org/10.1177/1477878512468385>
- Lambert, D., & Hopkin, J. (2014). A possibilist analysis of the geography national curriculum in England. *International Research in Geographical and Environmental Education*, 23(1). <https://doi.org/10.1080/10382046.2013.858446>
- Lambert, D., Solem, M., & Tani, S. (2015). Achieving human potential through geography education: A capabilities approach to curriculum making in schools. *Annals of the Association of American Geographers*, 105(4), 723–735. <https://doi.org/10.1080/00045608.2015.1022128>
- Landeweerd, L. (2011). Asperger's syndrome, bipolar disorder and the relation between mood, cognition, and well-being. In J. Savelescu, R. H. J. ter Meulen, & G. Kahane (Eds.), *Enhancing Human Capacities* (1st ed., pp. 207–217). West Sussex: Wiley-Blackwell.
- MacKeen, D. (2017). *Broadening horizons: Using a geocapabilities approach to support students with a social difference*. University College London, Institute of Education.
- Maude, A. (2016). What might powerful geographical knowledge look like? *Geography*, 101(2), 70–76.
- Médicins Sans Frontières/Doctors Without Borders. (1996). *World in crisis: The politics of survival in the 20th century*. London: Routledge.
- Morgan, J. (2002). “Teaching geography for a better world”? The postmodern challenge and geography education. *International Research in Geographical and Environmental Education*, 11(1), 15–29. <https://doi.org/10.1080/10382040208667460>
- Priestley, M. (2002). Global discourses and national reconstruction: The impact of globalization on curriculum policy. *Curriculum Journal*, 13(1), 121–138. <https://doi.org/10.1080/09585170110115295>
- Sainsbury, C. (2009). *Martian in the playground: Understanding the schoolchild with Asperger's syndrome*. London: SAGE Publications Ltd.
- Sperber, E. (2013). The Age of Crisis. Retrieved from <https://www.counterpunch.org/2013/10/16/the-age-of-crisis/> (Last accessed 9 February 2018).
- Wing, L. (1981). Asperger's syndrome: A clinical account. *Psychological Medicine*, 11(1), 115. <https://doi.org/10.1017/s0033291700053332>

- Wing, L. & Gould, J. (1997). Severe impairments of social interaction and associated abnormalities in children: Epidemiology and classification. *Journal of Autism and Developmental Disorders*, 9(1), 11-29. <https://doi.org/10.1007/BF01531288>
- Young, M. (2013). Powerful knowledge: An analytically useful concept or just a “sexy sounding term”? A response to John Beck’s “Powerful knowledge, esoteric knowledge, curriculum knowledge.” *Cambridge Journal of Education*, 43(2), 195–198. <https://doi.org/10.1080/0305764X.2013.776356>
- Young, M., Lambert, D., Roberts, C., & Roberts, M. (eds.). (2014). *Knowledge and the Future School. Knowledge and the Future School: Curriculum and Social Justice*. London: Bloomsbury Publishing Plc.
- Young, M., & Muller, J. (2010). Three educational scenarios for the future: Lessons from the sociology of knowledge. *European Journal of Education*, 45(1), 11–27. <https://doi.org/10.1111/j.1465-3435.2009.01413.x>
- Young, M. (2017). The curriculum and the entitlement to knowledge. *Cambridge Assessment*. Retrieved from <http://www.cambridgeassessment.org.uk/Images/166279-the-curriculum-and-the-entitlement-to-knowledge-prof-michael-young.pdf>

---

**Donald L.D. MacKeen** Originally from the USA, Don moved to Glasgow, Scotland in 1996. He has been a Lecturer at City of Glasgow College since 2003, where he works on the Transitions course, a specialist educational course for young people with Asperger syndrome. He has incorporated Geography into the course and completed a Masters in Geography Education at University College London in 2017.