

‘Just don’t tell them what’s in it’: Ethics, edible insects and sustainable food choice in schools

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Supporting young people with global crises mitigation strategies is essential, yet loaded with ethical dilemmas for the educator. This study explores whether young people will make ethical decisions regarding the sustainability of food choice in schools, and based on the processes identified, what educators’ needs are in supporting transformative learning. This study is the first of its kind, where young people under the age of 14 have been tasting edible insects and discussing their role in a more sustainable diet. The article draws on mixed-method research with over 180 young people and their teachers in three schools in Wales and examines responses to a possible introduction of edible insects into school canteens. Highlighted is the complexity of sustainable food choices—likely to be identifiable with other young people and educators in western countries. The article considers how educators and policy makers may need to frame routes to positive sustainable action and the associated impacts these may have on personal, social, political and environmental spheres.

Keywords: edible insects; ethics; pedagogy; sustainability

Introduction

It is estimated that half of the planet’s surface considered habitable to plants is now being used for agriculture. Sarilo (2018) notes that 45% of this is being used for food that goes directly to humans, while a further 33% is for food to feed animals that will be slaughtered for human consumption. Furthermore, it has been predicted that, if the growing world population is to be fed, by 2050 42% more crop land will be required (UN FAO, 2013). Such intensive farming is, and will continue to have, significant environmental consequences. These include greater pressure on limited water supplies, the degradation and erosion of soil through intensive farming practices, loss of species through deforestation, increased use of chemical pesticides/fertilisers and increases in greenhouse gases associated with the production of vertebrate animals for human consumption (see Schanes *et al.*, 2016 for a review of this and routes to mitigation not covered in this article). This predicted increase is largely due to the expected 76% increase in meat consumption (WRAP, 2015). Eating meat has been identified as the largest contributing factor to food-related deforestation (Erb

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et al., 2016) and contributor to greenhouse gas emissions that could be reduced considerably (Ranganathan and Waite, 2016). In response to this, the Food and Agriculture Organisation of the United Nations (UN FAO) has recognised the benefits of entomophagy (eating insects) and has urged the West, where such practice is more uncommon, to adopt this dietary change (van Huis *et al.*, 2013).

The practice of eating insects has a long history. Aristotle, in his writings around 350 BCE, mentions how to harvest the tastiest cicada (Aristotle and Barnes, 1995), while the *Book of Leviticus* in the Old Testament notes which insects are permissible to eat (namely locusts, crickets and grasshoppers). Today, over 2 billion people regularly eat insects (Sarilo, 2018). However, with the shift to industrial agricultural practice in the West, insects as food can be seen to have metamorphosed into insects as pests: insects are now being regarded more as crop destroyers and disease spreaders rather than as part of an accepted diet. The result has seen the consumption of insects marginalised to ‘freak’ exploits on television shows such as *I’m a Celebrity... Get Me Out of Here!* (Jones and Beynon, 2020). Such positionality brings challenges to shifting dietary preferences.

In a recent study comparing edible insects to commonly consumed meat, Payne *et al.* (2016) concluded that there are no health-related trade-offs in promoting insects as foods over meat. Results showed that three of the insects tested proved significantly nutritionally superior to beef and chicken. However, even with this growing evidence regarding positive environmental credentials and health benefits, van Huis *et al.* (2013) note that if consumers are to accept this adaptation then consumer attitudes surrounding entomophagy must also change. I would add that consumers, if they are to be supported in being agents of change, should be made aware of the associated political and economic systems that surround this change. Such transparency in the supply chain would enable more informed choices to be made and these systems to be questioned. Similar to the promotion of the expanding plant-based milk industry, edible insects in the West could be seen to promote a neoliberal ethic where, as Clay *et al.* (2020) note, systemic problems are individualised to further establish consumables as solutions. While edible insects may support healthier diets and reduced greenhouse emissions, they could ultimately reinforce the political economy of industrial agriculture. An assumption that avoiding meat and eating insects as a single action for change will address issues in the broader agricultural system is naïve. The complexity of scaling up such an industry makes ethical decisions about what we eat difficult to negotiate and in need of research.

The situation is pertinent to this article. Young people are the generation faced with living their lives in this context. They will need to make difficult, complex choices for a ‘better’ tomorrow. It should not be inferred that young people are powerless until they reach adulthood. Young people are increasingly active with regard to wanting to engage and enable global climate politics. School Strike for Climate Action protests, led by Greta Thunberg, have become increasingly popular as young people gather together to demand greater action in response to the climate emergency. However, in a recent article, young activists reflected on how they are often treated by older people as though they are too inexperienced, naïve, young and ultimately powerless to make a difference (Brookes, 2019). It should be recognised that these young people are actors in a system where their actions are

already loaded with ethical consequences. Likewise, how young people negotiate the politics of food in the school canteen could be seen as an extension of this, with similar restrictions imposed.

When considering how young people make decisions about what to eat, school becomes a context for ethical negotiation where research, to date, has been dominated by relations of power between the various stakeholders involved—namely catering staff, parents, local/central government policy (e.g. Pike, 2010; McIntosh *et al.*, 2010; Gibson and Dempsey, 2015). It is these stakeholders who tend to have the power to decide what young people eat. For example, with reports of increasing numbers of young people classified as ‘obese’ (Cabinet Office, 2016), there has been mounting emphasis on healthy eating and what adults might deem an appropriate or responsible diet for young people. Coupled with this, there is little if no consideration of young people’s attitudes to the supply chains and the wider social, political and environmental impact of their food. While the young person is the central consumer in this network, they are often ‘passive’ actors. They are served what is on the menu, ultimately as decided by others—their only protest strategy being not to eat it, which wastes money, increases food waste and so contributes to further unnecessary carbon emissions.

While Punch *et al.* (2010) discuss moralities surrounding behaviours and relationships between children and other people when eating at school, what has failed to be considered are the wider moral and ethical implications young people are negotiating when choosing certain food types. What happens when the complexity of political, economic and environmental issues of food are presented? Will young people want to make ethical choices?

In this article, I will consider how young people negotiate ethical understandings surrounding food choices in the face of sustainable options, and the barriers and opportunities to this understanding as a result of recent policy change in Wales. Drawing on research with three schools in the Principality, I will consider how young people negotiate new sustainable lunch-time options when provided with the choice of swapping familiar burgers and bolognaise made from the vertebrate animals commonly used in UK foods (cows, pigs and chickens) with an alternative source of protein derived from edible insects. How educators can support transformative behaviours will be considered, before suggesting ways in which further work in this area could be supported.

Why Wales?

Wales is of particular interest to the future food strategies discussed for two reasons.

Firstly, Wales is going through curriculum change in response to the Successful Futures Report (Donaldson, 2015), which concluded that learning content in Wales was outdated and needed significant review. At the time of writing, schools are beginning to replace what the Welsh Government (2019a) describe as the current ‘prescriptive, narrow and outdated curriculum introduced in 1988’ for a curriculum that does away with traditional subject boundaries and has four purposes. These will support learners to be:

- ambitious, capable, lifelong learners
- enterprising and creative
- healthy and confident
- ethically informed citizens of Wales and the world Welsh Government, 2019b)

Of interest to this research are how the last of these purposes intersects with food choices and may provide motivation for schools to re/consider sustainable food with a new focus and put new emphasis on supporting young people as agents of change.

It should be noted that the call to embed global citizenship education is not unique to Wales, and comes from decades of environmental, sustainable development and global citizenship innovation and education research. This has more recently been formulated in the agreed Sustainable Development Goals (2015) (target 4.7). This is one of UNESCO's key educational objectives for the period 2014–2022, and one of the priorities outlined in the United Nations Secretary General's Global Education First Initiative (UNESCO, 2014).

Whilst there is complexity and difficulty in defining sustainable, environmental, global citizen-focused education (Valencia Saiz, 2005; Standish, 2014), UNESCO (2014) identified three conceptual learning dimensions: cognitive, socio-emotional and behavioural. The goal being 'to empower learners to engage and assume active roles both locally and globally to face and resolve global challenges and ultimately become proactive contributors to a more just, peaceful, tolerant, inclusive, secure and sustainable world' (p. 14). This appears to be the essence of the new Welsh Curriculum.

Secondly, Wales is home to Grub Kitchen, the only restaurant in the UK with edible insects as the daily focus of the menu. Sited at The Bug Farm, these popular visitor attractions in Pembrokeshire, west Wales, have a mission to educate on the importance of insects to modern society, whether considering pollination and food chains or sustainable agriculture and feeding a growing population. Founders Andy Holcroft and Sarah Beynon have also developed a range of edible insect products through their Bug Farm Foods manufacturing, wholesale and retail business. Of relevance to this research is their development of a product called VEXo, a meat alternative containing vegetables and edible insect protein. The Welsh Government provided support for this development through Innovate UK funding and the product was taken into three Welsh schools in 2018 as a pilot project.

Purpose of the study

The purpose of the study was to begin to establish how young people negotiate new, sustainable foods in school. It was also hoped to develop a better understanding of how young people view entomophagy as a possible, more sustainable future food option. With regard to entomophagy, the literature has been dominated by adults' views, with little consideration of young people under 13 years of age (e.g. Megido *et al.*, 2014; Laureati *et al.*, 2016). It was anticipated that this approach would support research-informed directions for future enquiry and contextualise the complexity of sustainable food and school at the personal, social, political and environmental levels.

Method

Participants

Ethical consent was obtained from the University of the West of England, Bristol. Following this, four local authorities in Wales sent out a recruitment call to schools (via email) outlining the project details. From this, two primary and one secondary school were identified from a similar catchment area. The research focused on the experiences of pupils in Years 2, 4, 6, 7 and 9 (respondents ranging in age from 7 to 14 years old), as research to date has focused mainly on adults [with the exception of Berghuis *et al.*'s (2018) work that reflects on research with university students]. Parent/carer meetings were held at all schools prior to the research. These sessions introduced the project, shared how classroom sessions would be run and included the opportunity to taste VEXo and ask questions. 187 consent forms were signed by parents/carers and their children to take part in the project. 16 staff from the schools gave their consent to be interviewed.

Data collection

A mixed-method approach informed the study in order to draw on both qualitative and quantitative data. Data was collected through 187 pre- and post-questionnaires, where each young person was asked to consider how they felt about eating insects, what their expectations and experiences were, and their personal reflection on educational needs surrounding sustainability in the future. Each question was read aloud to ensure all participants were able to access the language. The Likert scale of 1–5 (1 being strongly agree, 5 being strongly disagree) was used, in addition to open-ended questions to give an opportunity for greater personal reflection, using either words or pictures. For example, young people drew how they felt or what they thought was interesting and/or important.

The reactions of young people to whole-class workshops (c. 45 minutes in length) were observed. Comments were noted and facial expressions/body language that indicated responses to what the audience was experiencing were noted. These workshops were led by an entomologist and a chef from The Bug Farm, with the aim to provide a context for why people might consider eating insects in the West. Advantages and disadvantages of different diets and farming practices were discussed, and young people were invited to taste VEXo (which was cooked in the classroom) in two forms: a burger and bolognaise. Any questions and responses to the sessions were noted.

From each class, a focus group (c. 30 minutes in length) of six volunteers, chosen by the teacher, provided qualitative feedback and evaluation using verbal and image prompts (of the product as well as meat alternatives) to support discussion. The focus groups also allowed time to co-plan what an educational resource might include (in response to the new curriculum's purposes). The children reflected on their wider experiences of sustainable development, environmental and global citizenship education to date, and considered what they felt led to changes in thought and behaviour and/or reaffirmed thought and behaviour in school.

Semi-structured interviews (c. 30 minutes in length) were conducted with teaching staff and members of the senior leadership teams. These considered the usefulness of the planned educational resources, which were co-planned with young people. Teachers' confidence in teaching in this subject area in the new curriculum, and the demand to consider ethics, was discussed. Having made amendments based on young people's and staff input, teaching resources were then distributed to schools. After 4 weeks, a follow-up with teachers was made to discuss if and/or how the workshop and educational resources had impacted on teaching and learning. As the findings are extensive and include reflection on pedagogy and teacher subject knowledge, for the purpose of this article I will only discuss those relating to young people.

Data analysis

A mixed-method evaluative approach based on interpretivist theory was used, whereby it is suggested that the impact of the programme was constructed from the shared meanings the participants made of their experiences (Schwandt, 2003). It was not the intention to formulate objective explanations or generalisable rules, but more to use methods which would provide an opportunity to help understand the specific context of eating insects in schools through agreed participation. All focus groups and interviews were transcribed and coded using content analysis as defined by Patton (2002, p. 43). To support anonymity, all participants were coded.

Results

While 80% of young people reported in the questionnaires that they wanted to learn more about sustainability, analysis suggested three dilemmas young people negotiate when faced with eating food prepared with insects as an ingredient: uncertainties surrounding the possible health impact of consuming them; questions regarding the source of the insects and how they were farmed; and concerns about what the products they were going to be asked to try might look like. The following sections will consider these themes in turn.

Are they going to make me ill?

This category focuses on how young people viewed insects as a food and how their experiences and personal context informed these views. Focus groups revealed that all young people in the study had, at some point, undertaken a 'bug hunt' at school and been taught how to identify insects as part of the science and/or geography curriculum. Many referred to television portrayals of eating insects on programmes such as *I'm a Celebrity... Get Me Out of Here!*, making comments about not wanting the same kind of experience as those on the programme, for example:

I don't mind about eating insects, but I don't want to eat live bugs like they do on the telly.

Entomophagy was not normalised into their everyday experiences. As a result, common responses from young people when discussing food containing edible insects

at the start of the workshops presented themselves as a tension between revulsion, fear and curiosity. This can be seen from these examples of responses from pre-workshop questionnaires:

I'm not doing it. [eating insects]

I am excited but nervous.

I am worried about eating wings and eyes that are in it.

Some young people identified with physical discomfort at the thought of eating insects, as can be seen below from two pre- and post-questionnaire comments:

Before: *I do have a bit of stomach ache.*

After: *I loved the insects they were YUM! I no longer have stomach ache.*

Before: *I might be sick and I'm sorry if I do.*

After: *I loved it!*

In focus groups after the workshop, young people identified five key moments in the session when entomophagy became more acceptable to them. First, when the insect content of regular chocolate was shared (there being around 30 parts of insect for every 100 g bar)—something that most of the participants ate regularly and had never had any ill effects from. Second, from looking at data that compared the ecological footprint and nutritional content of a beef burger versus a bug burger (and finding that the production of a bug burger uses fewer resources than a beef burger). Third, from having watched and smelled the product being cooked in class. Fourth, having had the opportunity to ask questions of 'experts'. Fifth, seeing their peers try the products with no immediate ill effect and without any pressure from adults.

Where do the bugs come from?

Here the focus is on how the young people negotiated their ideas of farming. Recognisable farming practices in young people's imagination were disrupted when faced with having to think about how the growing world population was to be fed if current vertebrate-heavy diets were to be kept. They were upset by the potential lowering of animal welfare that more intensive farming could result in.

We need to look after the animals on farms. I don't want our farms to look like that. [referring to images of intensive cattle and poultry farming in the workshop]

The high-tech, high animal welfare of edible insect farming practices in certain areas of Europe proved to be a topic of interest to all focus groups. Young people were keen to discuss the ethics surrounding the keeping and killing of these animals. The complexity of deciding what was a humane way of killing insects for food proved a

topic for discussion in all focus groups, and suggestions that insects might not be sentient were met with various degrees of uncertainty. For example:

Young person A: *Why don't they [farmers] just squash them?*

Young person B: *It would take ages. They'd need a big squashing machine.*

Young person C: *And what about if it didn't kill them right away. It's a bit cruel isn't it.*

However, all participants in the focus groups felt that death by freezing (a common strategy for mass insect slaughter) was an acceptable way to kill insects for human consumption. As one young person stated:

I was interested about how they kill them [insects] by freezing and it is much kinder than what they do to farm animals.

Any detailed knowledge of the farming and slaughtering process involved with vertebrates was not pursued. Whilst this issue was outside the remit of this project, further ethical consideration was made by one young person. Concern was raised about the consequences of wide-scale uptake of edible insects and they began to consider the complexity of such a dietary shift:

But what happens if we eat all of the insects? We need insects to pollinate plants and we have to look after the bees.

Others responded to this, drawing on information they had heard in the workshops, and talked about the difference between 'wild' and 'farmed' insects.

What do they look like?

This category depicts how young people negotiated their feelings regarding acceptable forms of edible insects. After discussion and reflection in focus groups there was unanimous agreement that young people did not wish to eat food with visibly recognisable insect parts. Instead they preferred processed food in familiar forms, such as the bolognaise and burgers used in the workshop:

They [insect-containing food] were just like my usual food.

It tasted and looked just like normal food.

It was no different.

When faced with identifying images of a variety of vertebrate and processed edible insect-containing burgers and bolognaise in focus groups, some young people identified positively with what looked most familiar. However, the majority of young people looked to identify with those containing edible insects because they felt it was healthier and better for the environment. The product had been normalised and made more acceptable:

It's [food containing edible insects] tasty and it looks the same [as familiar burgers and bolognaise]. Just don't tell them [other young people] what's in it . . . they'll never know it's got bugs in.

PLEASE ADD THIS TO THE SCHOOL MENU! It is so tasty and is good for the planet.

Across the 187 young people asked, there was a shift towards acceptance of edible insects as a school lunch-time option by the end of the workshop (see Figure 1), with reasons given for this based on taste, health and the sustainability of the products:

I never knew that insects helped the environment and they are so tasty.

I found the session surprising because I was not expecting it [food containing edible insects] to taste so amazing, be good for me and the environment.

Eating insects is healthy because they are full of protein and good for the planet.

Discussion

This study set out to establish if young people make ethical decisions surrounding sustainability with regard to the food they choose to eat in school. It has created a space in which to add to two areas of debate: sustainability as an indicator of food choice for young people, with its intersection with personal and global socio-environmental politics, and the impact of policy change on pedagogies for sustainability.

Rozin and Fallon's (1980) work on the rejection of new food notes that the consumer can be repelled by the unknown or assumed 'dirty' or 'nasty' nature of a new food—in this case an insect's habitat and/or behaviour. In such circumstances the consumer may anticipate a feeling of unwellness should the food be eaten. Results

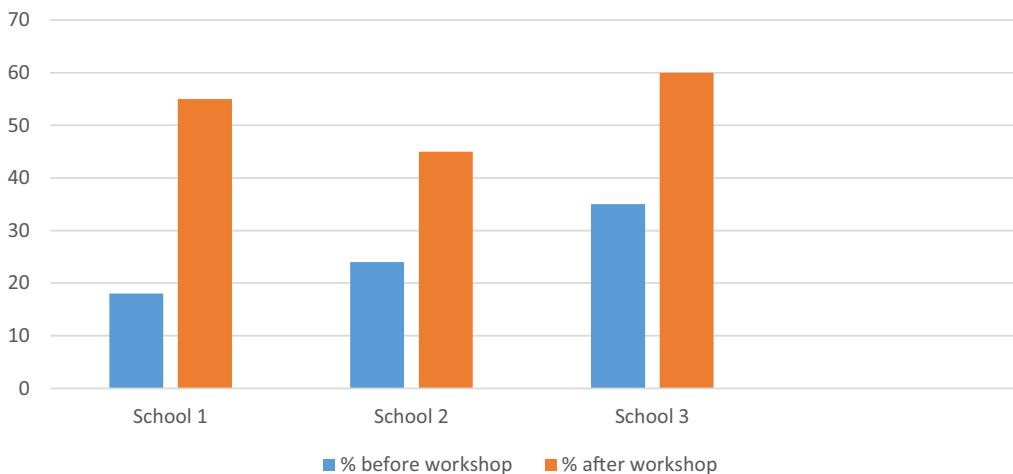


Figure 1. Percentage of young people who would choose edible insects for lunch at school [Colour figure can be viewed at wileyonlinelibrary.com]

from this study mirror this, in that young people reported feeling unwell at the thought of eating insects. They were relieved when the products looked, smelled and tasted familiar. I would suggest that the normalisation of edible insects is essential to the acceptance of them as a food source by young people not familiar with such a diet—so the majority of those in the West. These findings echo other studies undertaken with adults (Pascucci and de-Magistris, 2013; Megido *et al.*, 2016; Menozzi *et al.*, 2017; Sogari *et al.*, 2017). Returning to the embodied experience of trying the food also suggests that having the opportunity to see, smell and taste products with edible insects in is essential for young people to make informed choices. This supports House's (2016) call for more research that recommends a shift in forecasting acceptance away from the theoretical and towards grounded examples of actual consumption. Studies that focus on actually tasting edible insects are restricted, with just two notable exceptions focusing on adults (e.g. Looy and Wood, 2006; Megido *et al.*, 2014).

Through the implementation of the new curriculum, the Welsh Government has committed to developing informed, ethical citizens through their education system. The topic of food and associated supply chains is one way that schools could engage with this—thus supporting the 80% of young people in this study who wanted to learn more. Sarilo (2018) notes that education is an essential part of any action focused on bringing about healthier and more sustainable diets. Results from this project suggest that young people want to make food choices not just based on taste and health, but also based on the sustainable credentials of a product. Whilst this involves a close inspection of the supply chain, to support these choices teachers need to have up-to-date subject knowledge.

Recent research and ethical considerations surrounding insects in social science research has tended to frame insects as disease-carrying microbes (Davis and Nichter, 2015), or creatures that sit beyond moral consideration due to what Lorimer (2007) calls their 'radical alterity'. This simultaneously positions insects as *other*, and what Loo and Sellbach (2013) refer to as 'doubly other'—being *other* than humans and *other* than the food we usually eat. Thus, insects are further distanced from the hungry consumer, and an image of them being atypical food products in the West continues to be supported. Bear (2019) notes that the sheer numbers involved in insect farming, coupled with the speed of their lifecycle (in comparison to cattle), can lead to a *detached detachment* by the adult consumer, but whether this adult detachment is the same for young people is questionable. Research from Harter (2012) suggests that teenagers at least have a clear sense of self-awareness which may foster an openness to ethical issues. However, the voices of younger people, of primary school age, are still not being accounted for. Simply shifting existing principles used with livestock farming and food production to this emergent arm of agriculture leaves educators with difficult issues to address and no simple, straightforward answers to frame the delivery and facilitate the expectations of the new curriculum in Wales. This is made more challenging by concerns over young people's wellbeing in the face of global climate change.

Recent research has shown that young people of school age are suffering from anxiety in the face of the constant messages surrounding the global climate crises, communicated to them through contemporary society's plethora of instant media (for a

review, see Ojala, 2016). Hicks (2018) and Whitehouse (2018) note that many teachers dwell on the doom-and-gloom stories littering the headlines, leaving young people feeling at best disempowered and at worst disengaged in a system out of their control. My research has recognised that young people do wish to choose more sustainable food options and many welcome the opportunity to have their preconceptions surrounding what is acceptable to eat (in this instance, edible insects)—in the face of sustainability—disrupted. However, without schools and local authorities listening to this voice, young people once again become the disempowered and disengaged future generation in a crippling cycle of inability, not sustainability (Figure 2). One in which they recognise the external ethical powers at work with regard to who chooses what they eat—the comment *'just don't tell them what's in it'* highlighting this recognised position.

I would advocate for a more structured and supportive approach that empowers young people to consider, through more critical reflection, their behaviours and the behaviours of those in power. To enable this, educators need the time to think, plan and act in ways that are both pedagogically effective and responsible. Hicks (2019) suggests that such opportunity could be framed using four stages of engagement:

1. The acquisition of appropriate knowledge of the issues.
2. An exploration of young people's feelings towards these issues.
3. The identification of relevant choices for positive change.
4. Opportunities to engage in appropriate action for change.

Using such a pedagogy—with regard to the current food system's contribution to the global food crises and climate change—will shift debilitating apathy to spaces where transformational emancipation and informed ethical actions may be possible. New ideas that disrupt current practices can be realigned and supported. However, it should be noted that state support here is essential; not only is the Welsh Government funding the development of an edible insect food for schools, but it has also made

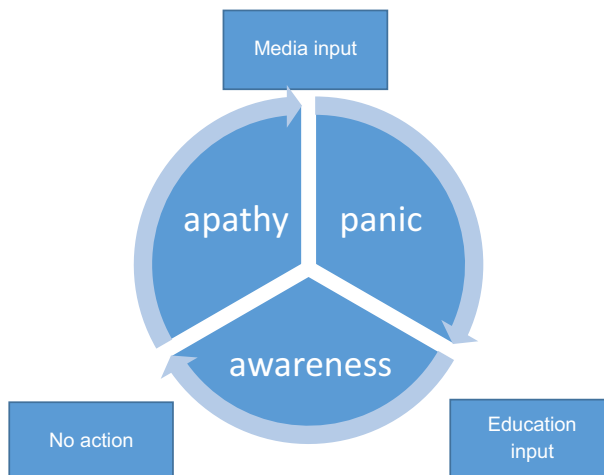


Figure 2. The cycle of inability [Colour figure can be viewed at wileyonlinelibrary.com]

significant policy changes that emphasise ethical citizenship in the new curriculum. This demands that schools provide opportunities for sustainable enactment by students, without which teachers would not necessarily have the same motivation to engage and enable learning on these topics.

Conclusion

If schools are going to take young people's concerns over global crises and calls for more sustainable food systems seriously, then there needs to be a shift in the way these issues are presented in school. Sinatra and Hofer (2016) argue that young people need to have their epistemic trust (their belief about source credibility) challenged by teachers. Without being able to evaluate the issues, they will not be able to critically reflect on what they feel will help the food system crises and support positive behaviour change at a time of ecological and climate emergency. Whilst being presented with the most up-to-date information, young people need to be supported in recognising that this knowledge is only temporary in itself. It is likely to change; knowledge is not permanent, and the current advice may be the 'good choice' to make only at this point in time.

At present, entomophagy is one possible route to a more sustainable future in a suite of possibilities. It offers a dietary alternative that could alleviate pressure on the environment from food production, whilst potentially reducing the malnutrition in developed and developing countries (van Huis *et al.*, 2013). However, if exploited and/or expanded without due care for sustainable futures, then a damaging industrial cycle may result—as has been seen with other alternatives, initially considered more sustainable (see e.g. the case of soya in Nature, 2011). Dobermann *et al.* (2017) note that the systematic management of edible insects needs further consideration. More transparent processing and storage, as well as agreed rearing practices, need to be agreed and implemented before widespread consumption would be possible. Following such suggestions would move some way towards developing a more ethical edible insect food chain, where the relationship between behavioural change and food could be explored. Even then, barriers to such learning in the classroom could still remain without support at all levels—from local authority to canteen staff—as well as the need for well-informed educators.

This research has suggested that sustainable food choice could be framed around four blocks:

- Giving focus to the current and future context—drawing on evidence-based research.
- Reflecting on young people's own experiences and narratives with insects in order to realign misconceptions as part of a transformative strategy.
- Having greater choice at the canteen—reducing vertebrate and increasing edible insect options.
- Identifying subject areas that support discussion of sustainable foods and integrating these into the curriculum (e.g. through geography, food technology, science, English, citizenship, personal and social studies).

Whilst seemingly straightforward, teachers are themselves challenged by such demands. Deeper understanding of the complex and often messy issues surrounding sustainable choices is limited by subject knowledge, which educators themselves may not have an awareness of. Therefore, there is a demand for more rigorous consideration of these issues and how to teach them through teacher training programmes and provision of professional development.

At the time of writing, young people are taking climate action outside schools and demanding governments listen to their voices. Back in schools, with supportive policy, informed teachers and *hopeful pedagogies* (Hicks, 2014), educators can further enhance complex, ethical understandings of global crises.

This work provides initial evidence for evidence-informed decision making (by Welsh authorities and wider) to assist with sustainable food policy design, improve sustainable performance of food systems, and increase accessibility to healthier and more sustainable consumer options in a context where previously neither sustainability nor young people were the focus.

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Ethical guidelines

BERA guidelines were followed and ethical approval was gained from the University of the West of England, Bristol's Ethical Committee.

Conflict of interest

There are no conflicts of interest.

Data availability statement

Research data are not shared.

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