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How educational staff in European schools reform school food systems through 'everyday practices'

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ABSTRACT

Schools are recognized as important locales for education and action to change food-related environmental and health behaviours. Research shows the potential for a whole school systems approach to integrate educational activities, food in school, and wider food-related interactions. However, little attention has been given to how theory is put into practice in terms of reforming school food practices in the everyday routines and commitments of schooling. This study aimed to identify how school practitioners operationalise whole systems approaches. The context was an exchange programme involving schools and national school food non-governmental organisations in England, Denmark, and the Czech Republic. Using case study design, the research involved school practitioner interviews and critical group reflection. Participants adopted perspectives and identified actions to create solutions in real-world practice settings, such as themes around, 'persistence, passion and belief'; 'bending the rules' 'supportive, respectful, and united teams'; 'having a holistic vision', 'resistance', and 'making-do'. Drawing upon a conceptual framework concerned with taking an integrated approach, we suggest that these 'everyday practices' have a critical role in food systems reform in schools.

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Integrated school food systems; communities of practice; teacher identities; sustainable food; whole school approach; action research

Introduction

The Food and Agriculture Organization of the United Nations has warned that, if the growing world population is to be fed, then 42% more cropland will be required by 2050 (Food and Agriculture Organisation 2013). With 78% of land already used for the production of food for human consumption (Sarilo 2018), such a prediction demands change. There are additional imperatives for action given the contribution the role of food production in greenhouse gas emissions and biodiversity loss (Erb et al. 2016). Furthermore, the organisation of the contemporary global food system is linked to health and social issues such as nutritional insecurity and the breakdown of culinary traditions (Swinburn et al. 2019; Willett et al. 2019). In this context, schools are recognized as important locales for action to change, not least because of their reach and potential to influence how younger generations engage with food (e.g. WHO 2012; Story, Nanney, and Schwartz 2009; Hawkes et al. 2015).

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There is an extensive field of research on engaging school students on food issues, not least in the areas of food literacy and the promotion of dietary behavioural change (e.g. Micha et al. 2018 for a systematic review). Some of this research makes the links between healthy eating and the promotion of a socially and environmentally sustainable food system (e.g. Oostindjer et al. 2017). One theme across this field is the potential effectiveness of experiential learning techniques and strategies where, for instance, food-related education builds on practical growing, cooking, recycling, and farm-visit activities (e.g. Diker et al. 2011). These learning approaches are associated with healthy eating outcomes for children in preschool (Lucas et al. 2017), primary school (Dudley, Cotton, and Peralta 2015) and secondary school (Brooks and Begley 2014) settings. Experiential education is also linked to positive knowledge and attitudinal changes towards food environmental and social issues (e.g. Jones et al. 2012) although these outcomes are likely to depend on programme quality (Blair 2009; Black et al. 2015). Research also shows the potential to make connections between core educational activities, school meals and other food in schools, and the food-related interactions between schools and their local community context (Jones et al. 2012; Ruge et al. 2016; Micha et al. 2018; Mogren, Gericke, and Scherp 2019). In this paper, we refer to this type of approach as one that draws attention to the need for an integrated school food system (ISFS).

Understanding the integrated school food system

The concept of the ISFS can be defined as a whole-school perspective that involves all parts of a school working together and being committed to healthier, more sustainable, and socially beneficial food practices. The ISFS places an emphasis on school settings as 'systems' (Keshavarz et al. 2010) that have multiple points of engagement with food issues. Organisational and behavioural change is the product of the coordination and experiential learning of all stakeholders in the system. From the perspective of health promotion, a focus on the ISFS draws upon much of the WHO's health promoting schools framework developed in the late 1980s (Langford et al. 2015) and the whole-school approach to school health articulated by the Schools for Health in Europe Network (Bartelink and Kathelijne Bessems 2020). From the perspective of sustainable development, ISFS reflects the holistic principles of the Education for Sustainable Development and Eco Schools movements (Henderson and Tilbury 2004; Shallcross and Robinson 2008; Jucker and Mathar 2016).

For schools seeking to adopt an ISFS approach, they need supportive structural conditions in the form of clear policy guidance, financial resources, and the opportunities to build capacity over time (Oostindjer et al. 2017). The political processes to bring these conditions are unlikely to be forthcoming unless key actors are enabled to implement promising policies under real-world conditions (Lipsky 2010). This is a problem because few examples are derived from studies of grass roots practice. As relevant systematic reviews show (Evans et al. 2012; Savoie-Roskos, Wengreen, and Durward 2017; Murimi et al. 2018) most interventions are designed for research purposes, or as programmes supplementary to the mainstream of educational practice. Given the current and impending scale of the issues, there is an urgent need to understand how educational practitioners develop innovative work with the complex challenges of food system education under everyday circumstances. In this context, there is some relevant research concerning the importance of teacher identities in promoting environmentalism (Almeida, Moore, and Barnes 2018), the role of communities of practice (Wenger 2011) and organisational learning in schools (Kools and Stoll 2016). Other studies have been concerned with the role of alternative pedagogies informed, for example, through values of experiential learning (Weitkamp et al. 2013), eco-justice (Shallcross and Robinson 2008), collective responsibility (Aarnio-Linnanvuori 2019), and environmental activism (Chawla and Flanders-Cushing 2007; Hicks 2018, 2019). Taken overall, these action-oriented perspectives on teacher learning share a resemblance to the student experiential learning techniques and strategies outlined above.

In this paper, we are concerned with how key actors embed the ISFS model through day-to-day routines and commitments. The aim of our study is to examine the lessons learned from school practitioners in England, Denmark and the Czech Republic who are developing innovative practices in their journey to an ISFS approach. As such, we consider what the common challenges are when embedding ISFS and how successful schools have overcome limitations of policy, funding, and capacity. In addition, we reflect on professional practices and organisational strategies that could be replicated in other school settings.

Context to the study: food in schools in England, Denmark, and the Czech Republic

This study was part of the European Commission Erasmus Plus initiative and consisted of an exchange programme between England, Denmark, and the Czech Republic. In each of the countries involved in the study, the exchange was hosted by a leading food-in-schools non-governmental organisation (NGO). More specifically these NGOs were LOMA (LOkal MAd: 'local made') in Denmark; Food for Life in England; and Skutecne Zdrava Škola (SZS: 'really healthy schools') in the Czech Republic. During the programme funding application process, lead staff in the NGOs developed an understanding around similarities in their ISFS work with schools. An aspiration of the exchange programme was to increase the skills, confidence, and competences of education practitioners with regard to food-related activities, and to enable implementation of new or enhanced approaches contributing to good food culture in schools. For each country, there are differences in education systems and school food practices, and these were reflected origins and focus of the programme NGOs.

Following a moral panic about food in schools in the early 2000s (Morgan and Sonnino 2013), schools in England received some national policy attention with respect to nutritional and food standards, free school meals, cooking skills, and targeted food education (Dimbleby and Vincent 2013). NGOs – such as the Food for Life initiative – led pressures to connect food and environmental issues, promote values-based food procurement, experiential education, and shared decision-making. Food for Life had developed step-by-step guides, schools networking schemes, and an awards framework to encourage schools to adopt an integrated approach a wide range of food-related issues (Food for Life 2021). While there has been innovative work at the level of local government, the period of our research was characterised by reductions or restraints on school funding, a policy focus on attainment and a narrow curriculum, deregulation, and devolved decision-making to school trust academies.

Schools in the Czech Republic have experienced a history of strong government central planning and bureaucratic regulation. This promoted a welfare model of entitlement to low-cost meals for all children in schools, but left little scope for schools to take an integrated approach. Since the late 1990s, the European healthy schools and eco-schools movements have had some influence, albeit limited, in the practices of schools in the Czech Republic (Thomas, Parsons, and Stears 1998; Cincera et al. 2017). Recent reforms have liberalised the education sector, which has led to greater scope for local innovation. However, this has been accompanied by increasing divergence and inequality in educational and school meal provision. The period of this research saw a growth in specialist NGOs such as SZS (SZS (Skutecne Zdrava Škola) 2021) and cross-sectoral partnerships, alongside the retention of some strong national regulations with respect to, for example, food safety standards. In this context, SZS originated with the goal to improve the state of the school food and food culture through the use more sustainably produced foods from local farms and experiential food education. As with Food for Life, SZS operated as a nationwide programme.

The picture in Denmark has also been one of change. The country has a history of high welfare resourcing, social democratic collective decision, high local government resources, liberal pedagogy, and high professional standards. While this has provided a positive platform for action on sustainable food issues, some aspects of the schools system are more challenging.

Few schools offer a lunchtime meals service and, consequently, the packed lunch is the main provision in school (Ruge and Mikkelsen 2013). Large corporate food industry and retail actors have retained a powerful influence on food policy in schools (e.g. DR (Danish Broadcasting Corporation) 2020), and it appears that these actors are influential in promoting the packed-lunch system and restricting food education to narrowly defined diet and environmental topics. Counter to these influences, LOMA evolved with a focus on connecting schools to local food producers, and on the importance of practical food education and food literacy (Ruge et al. 2016). LOMA began as an innovative, municipal initiative in 2013 at one secondary school in Svendborg, Funen. Later, in 2015 a scaling-up project was initiated at five more schools, including primary schools in Jutland, Funen and Zealand. From 2017-2020 the LOMA approach was consolidated and further developed into a national association aiming at expanding the integrated LOMA-approach to more schools in Denmark (LOMA 2021).

In all three nations, the global climate crisis gained increasing attention over the course of our research. Much of the concern was driven by students, their families, and staff rather than at a higher political level. In the context of schools, aspirations to change the engagement on food-based environmental and social issues were clearly one part of a response to the crisis, and – alongside other public concerns about food – provided a back- drop to the present study.

Methods

Methodology and research design

This study used qualitative action research methods (Stringer 2013) in a case study (Yin 2009) covering the duration of the schools exchange programme.

Characteristics of the exchange programme characteristics

The programme took place over 24 months and consisted of one exchange to each of the three participating countries. Including host country representatives, the number of participants for each visit was: 29 for Denmark; 32 for UK; and 27 for the Czech Republic. Six schools, two from each country, led engagement on the programme. These schools had common challenges with regard to inequalities in child health and learning outcomes, but also had a history of successfully implementing an ISFS approach.

The exchanges included visits to core participating schools and additional schools, participation in experiential food education activities, presentations, group reflections and interviews. As summarised in Table 1, the periods between exchanges involved a series of webinar learning events and ongoing group communications on best practice through a closed social media platform.

Drawing upon the shared elements of frameworks developed by the three NGOs participating in this programme, a comprehensive description of activities that form the basis for whole school setting approaches to food in the three countries was constructed (see Table 2). The overarching six domains of action provided an ISFS model that was then used as a point of reference for the programme goals, learning goals for participants, and the evaluation framework.

Research participants and data collection

The research participants consisted of a range of educational practitioners from Early Years, Primary and Secondary sectors along with the NGO programme coordinators and development leads. Participants were from a range of positions including head teacher, teacher, teaching assistant, school administrator, school cook/kitchen staff and food activities coordinator. A majority had over nine years' experience working in education.

Table 1. Summary of the programme of activities.

Date	Activity
Oct 2017	Programme inception meeting Training webinar on "School farmers markets"
Feb 2018	Exchange visit in Denmark: including practical cooking education; school-farm visits; food sustainability education; school food gardens; student councils; staff training; pedagogies for food education; group reflection exercises. Post visit educational materials and follow-up webinar Training webinar on "Pupil participation in cooking"
Oct 2018	Exchange visit in England: including practical cooking education; healthy and sustainable school food procurement; school-meal standards; school-farm visits; school food gardens; food sustainability education; student councils; after-school farmer and community markets; staff training and networking; pedagogies for food education; group reflection exercises. Post visit educational materials and follow-up webinar Training webinar "School gardening"
Apr 2019	Exchange visit in the Czech Republic: including school meal systems; school food gardens; procurement through local farms; parental engagement; food sustainability education; staff training; pedagogies for food education; group reflection exercises. Training webinar on "Involvement of parents in integrated school food" Post visit educational materials and follow-up webinar Dissemination to colleagues about learning and outcomes from the project
Sept 2019	Final programme meeting and dissemination

Table 2. Activities that characterize the Integrated School Food System (ISFS) model in the England, Denmark, and the Czech Republic.

Domain	Activity
1. Practical cooking education	Practical cooking education within school hours Practical cooking education outside school hours (extra-curricular)
2. Practical food growing education	Practical food growing (gardening) within school hours Practical food growing (gardening) outside school hours
3. Farm, community and food business links education	Educational visits to farms or other food businesses School or community-based markets for food produced by farmers, local businesses, or the school community
4. Food health and sustainability education	Education on healthy nutrition and diet Education on food, sustainability, and environmental issues (such as organic, fair trade, animal welfare, waste, local food issues) Work to involve school cooks or catering staff in mainstream educational activities
3. School mealtime experience	Work to improve the meal-time experience of school students Work to procure school meal ingredients from local, organic, or other food producers with high standards for sustainability Breakfast clubs and out of school hours provision of food
4. Engagement, co-production and policy change	Engaging with parents and families on food related issues in school (such as surveys, consultations, working groups) Engaging with students on food related issues in school (such as surveys, consultations, working groups) Developing school policies, rules, and guidance on food in schools (such as rules on high sugar drinks in school) Developing a 'whole school' and 'integrated' strategy for healthy and sustainable food in school Using digital tools to promote accessibility and inclusion in food education and planning

Over the course of the 24-month programme, 20 group reflections (lasting 20-120 min) were completed, with a range of three to six individuals participating in each group. Each group reflection drew upon Gibbs' reflective cycle (1988) in which participants were asked to reflect on their experience of exchange activities through (1) discussion of their thoughts and feelings, (2) evaluation and (3) analysis of their experiences, and (4) interpretation for their own practice. The group reflections involved making comparisons between their own professional practices and those encountered during the exchange activities. Groups recorded in writing their key interpretations with the assistance of three researchers.

Using a purposive sampling approach (Kelly 2010), the three researchers undertook interviews with twenty one participants (lasting 20-60 min) in the final exchange, with representation from all countries and practitioner groups. Following the group reflection framework, the interview questions covered reflections on the practices that participants encountered, comparisons to their own professional practice, and common themes around implementing the ISFS approach as characterised in Table 2. We collected further qualitative data on these issues from ten participant blog posts, eight ten-minute group presentations, and the reflective diaries of the research team.

Data analysis

Analysis of data drew on interpretivist theory in which we understood that the learning to arise from the programme was produced through the shared meanings the participants made of their experiences (Schwandt 2003). Group reflections, interviews, and further qualitative data were transcribed and catalogued with the assistance of NVivo12. Drawing upon Gale et al. (2013) framework method, initial codes were developed independently by two researchers (MJ and DR). With the assistance of the third researcher (VJ) these codes were then consolidated into a framework of leading themes and charted against the dataset to include references to interesting or illustrative quotations (ibid., 5). As part of a participatory reflective cycle and an opportunity to explore the credibility of the results (a form of participant validation, Birt et al. 2016), we presented participants with initial summary findings from the data collection after each exchange visit stage of the programme. In the final stage, project participants were asked to review and feedback on the main learning themes to arise from the programme. This stage led to the combining and rephrasing of some themes. These summative themes are set out in the results section.

Ethical issues

Having obtained ethical approval through UWE's Health and Applied Sciences Research Ethics Committee (HAS.17.08.004), all programme participants were asked for consent (written and orally) to take part in the study. All interviews were audio-recorded, and all data was held in secure password protected environments. Participants were asked to observe personal confidentiality within the group. The reporting of results was anonymized, with quote identifiers showing the individual or group (e.g. "England teacher 2" is teacher no.2 from England) and country site of exchange (e.g. "Denmark exchange").

Results

Overall experience of the programme

In terms of learning about ISFS, participants were mainly positive about their overall experience of the programme. The organisation of the programme was reported to support trusting relationships that helped with the sharing of experiences and ideas. The majority of participants reported engaging with staff in other schools outside the formal training and exchanges. The experiential school visits and participatory activities gave an insight into the practical delivery of food activities in schools. Given the diversity of the schools and national contexts, some participants felt that it was hard to draw out commonalities and, on occasions, to identify the links to their own practice. The greatest contrasts were between school financial resources and staff autonomy: for both of these areas Denmark was observed to have substantial advantages over the Czech Republic and, to a lesser extent, England. However, overall, the multi-national

and multi-school stage design of the programme was felt to focus attention on the broad practice and system issues, rather than more narrow concerns.

The programme participants were mainly positive about implementing ISFS actions; however, a number of barriers were identified and negotiated. These included funding restrictions and financial constraints, organisational restrictions, unsupportive policy and political contexts, the marginalisation of food in the curriculum and a lack of parental support and engagement. Whilst these ongoing limitations were identified as barriers to an ISFS approach, participants recognized not only good practice through transferrable activities observed in the three contexts but also more complex institutional conditions within which the development of an ISFS could be nurtured in everyday work.

Themes for integrated school food systems in everyday practice

Analysis of the interviews and group reflections showed that participants identified a number of actions to address common educational challenges and create innovative solutions in real-world practice settings. The following section groups these thematically without a sequential order or ranking.

Persistence, passion, and belief

Participants felt that persistence was needed to create lasting changes within schools. It was reflected that there were often forces that tended to dismantle work. In addition, the involvement of everyone in the project across the whole school was seen as essential:

> Z has maintained the allotment project in Hull over the course of several head teachers with mixed levels of support. (Denmark teacher 4, England exchange)

> Perseverance just don't take any … you know … if you know it's right, do it. Just make sure you can follow it through. You've got to be passionate. If you're half hearted, it's not going to work. (England teaching assistant 2, Czech Rep. exchange)

These final remarks refer to having to have 'patience in everything'. By way of example, the participant talked about learning how it took ten years for a school to realise their bee-keeping plans.

Deeply embedding practice into organisational memory

Some participants emphasised that many initiatives come and go in school settings. Therefore, if sustainable food systems were to be embedded in a school it was important to plan - from the outset – for disruption - such as succession for staff changes.

You need to adjust the program and expectations to the individual setting. The aim is that the programme will eventually run itself within the schools. (Mixed group reflection, England exchange)

You have to have to have an expectation that all good things come to an end. It's especially important to plan for staff changes and cascade best practice. (England teaching assistant 3, England exchange)

Enthusiasm and fun to provide motivation beyond core responsibilities

It was noted that whole school setting food initiatives rarely persisted over time unless those most closely involved felt enthusiastic and able to enjoy themselves:

> At the primary schools you can see the enthusiasm, inspiration of the staff and positivity. (Czech Rep. teacher 4, Denmark exchange)

These feelings helped motivate staff to engage in activities that were outside their core teaching responsibilities. This involved encouraging the involvement of a wide range of staff, students of different ages, parents, community volunteers and other parties. In this respect, food worked well as an accessible and personally interesting topic to engage a wide range of parties.

Bending the rules. Creative interpretation of guidance and rules, and positive risk taking

Participants felt that many policy guidelines, rules, and norms in school settings tended to obstruct rather than facilitate practice. Therefore, breaking conventions, even in a small way, was seen to be a route to success when implementing innovative practical work in school settings:

> I was very happy to hear in X school they gave the waste food to a farmer, even though it's not allowed. I could see …they were in doubt … if it was a good idea to say it to us. But I think that this is the way forward … bend the rules if it makes sense. (England head teacher 1, Czech Rep. exchange)

> You should take responsibility as long as you can defend it afterwards. (Denmark teacher 2, England exchange)

> Life does not revolve around a risk assessment … at the end of the day the kids were there, and they were stir-frying [on an open fire]. I was there. The other teacher was there. There was an adult there all the time. You know, so you've got to give them the chance and they thoroughly enjoyed it. (England food activities coordinator 1, Czech Rep. exchange)

Giving practitioners the chance to experiment

Participants felt there was a need for flexibility and experimentation to cross practitioner boundaries. For example, one of the Danish primary schools employed a chef with an adapted contract to undertake educational work in classroom. Similarly, there were other instances where participants reported experimental practices:

> She talked about the impact of outside eating and preparing food. She has put this in place at the allotment the school has. She started this last July, as a pilot. "It was a bit 'cowboy-ish' but it worked, and the children loved it." (England teacher 8, Czech Rep. exchange)

> It's been interesting to see that teaching teams in Denmark have more choice in when to do subjects. (Czech Rep. NGO 1, Denmark exchange)

Sometimes these approaches involved crossing typical practitioner role boundaries and creating alternative professional identities. Participants felt that curiosity and enquiry underpinned much of the more innovative practices that they had encountered over the course of the programme (e.g. 'You need to think outside the box.' Czech Rep. head teacher 1, Denmark exchange). This was also illustrated with how practitioners had raised difficult political questions about the role of mainstream food industry and consumption in the climate emergency.

Having a holistic vision across the food learning journey of students

Participants reported that it was important to have a vision of the full trajectory of the food learning journey of students through the educational system.

> It is essential to engage children from youngest to juveniles, and to adopt comprehensive learning through the whole educational process. (Czech Rep. group reflection, Czech Rep. exchange)

> We're developing a food curriculum which details what each year group will learn ensuring all areas are covered by end of primary education. (England teacher 4, Czech Rep. exchange)

An overall vision was therefore needed to put a programme of age-specific and stage-based learning into greater perspective. It also drew attention to ensure that there were equitable opportunities across a school for all children to participate in learning. Without a holistic vision, participants reported that food-based learning activities often became a matter for a minority of students, or learning opportunities became disconnected, for example between mealtime and class-based activities.

Supportive, respectful, and united teams

Whole settings approaches require high levels of coordination and shared understanding of purpose. This theme emphasised that all positions within school teams needed to be able to work together to create and consolidate change:

> Respectful and united teams. The way all LOMA teams from all schools meet to discuss is important. I feel I don't get to speak to other teachers in FFL schools. This would help as we have so much to share. Why is there no FFL co-ordinator in Lincolnshire? Or is there and I just don't know? It would be good to see this level of discussing between schools in the Czech Republic and UK. (Denmark teacher 7, Denmark exchange)

> There needs to be coordination between teachers at different levels. High level of communication and cooperation. Compared to England where there are many barriers especially between primary and secondary. (Denmark cook 2, Czech Rep. exchange)

Real leadership to create a coherent and coordinated approach

While school leadership was often raised, there was a specific point about 'real leadership' involving getting a good synergy between leaders and frontline staff to develop a coherent and coordinated whole school approach:

> I think this only happens with leadership – it needs to be seen as something that's worth doing. (England teacher 2, Czech Rep. exchange)

Counter to this there was general discussion that this was not always necessarily the case. Participants were interested to see the role of class teachers and others as well (not necessarily about just the role of the leader):

> There needs to be coordination between teachers at different levels. High level of communication and cooperation. Compared to England where there are many barriers especially between primary and secondary. (England group reflection, Denmark exchange)

> In the Czech context – links between kindergarten and primary work best when co-located. (Mixed group reflection, Denmark exchange)

Resistance. Corporate food interests and narrow professional interests

Practitioners reported that successful ISFS approaches involved pushing back and resisting large corporate food industry interests external to the schools:

> Both the UK and the Czech packed lunches tend to include a lot of pre-packaged in healthy choices which our societies have come to see as normal. (Czech Rep. group reflection, Denmark exchange)

> We felt that in the UK and the Czech Republic convenience food marketed as packed lunch for children is very unhealthy but that children expect it: "my friend has this or that" … and that the pressure on parents to give our children what is normal in their society is high. In Denmark one of the biggest players within school gardening is a commercial box-scheme company, that has conceptualised the 'gardens-for-stomach' approach according to their Corporate Social Responsibility strategy. They ask schools to go to their premises 10-12 times a year and are very prescriptive about the ways to work that suits their interests. (Denmark teacher 6, England exchange)

There was also a narrow nutritional focus by some external interest groups, which led to a restrictive vision about the role of food education in school settings. Practitioners reflected on the need to broaden food education to include social and environmental perspectives on food and health.

Making do. Acting with discretion around funding, the allocation of resources, and the scope for drawing upon pupil, parent, and community assets

Several practitioners drew attention to the limited resources in schools and the need to act creatively with what was available:

> It's us utilising those resources that we have. It would be wonderful to have lots of money and buy all this equipment and things. But reality isn't that and so it's us looking at what we already have – we have the grounds and the time on the timetable, so we need to pick up with what we have to start with. (England teacher 7, Czech Rep. exchange)

There were many examples of drawing upon parental and other community assets to make projects work. An example was a kindergarten school in the Czech Republic that developed a garden project with voluntary contributions and minimal resources.

Differences in perspective

The group reflections and review processes meant that the themes presented above represented shared perspectives of participants. However, there were some differences of view that related to national and school contexts. School practitioners in Denmark were enabled to deliver ambitious food-based projects through greater access to funding resources and stronger institutional commitments to professional development of all grades of staff. In England and the Czech Republic, national policy commitments on the provision of school meals helped staff develop an extensive range of activities in relation to the lunchtime environment.

Discussion

This study explored the perspectives of educational staff engaged in implementing an integrated approach to food in school settings. The research and programme process promoted dialogue between practitioners from different countries, areas of work and types of school to draw out leading themes for 'real world' action. This learning is important because it builds on the sustained experience of those committed to health and environmental education through their lived experiences. The heterogeneity of participants and contexts in this study revealed shared themes and some diverse perspectives on school food systems change. While some themes were strongly linked to school food issues, others reflected themes on running initiatives in schools more generally.

Reflecting on wider research (e.g. Morgan and Sonnino 2013), it was not surprising that some of the key challenges for practitioners concerned the lack of clear government policy directives and funding for food initiatives in school, and the wider influence of unhealthy and unsustainable interests of the mainstream food system. These combined with other issues such as complexity of the subject for age-appropriate pedagogy, equitable delivery of experiential learning opportunities, and the disconnections between school meals services and curricular food education (Weitkamp et al. 2013). While all participating schools had invested in developing a whole systems approach, none was doing so under conditions that were unusual for their national contexts.

Many of the themes presented in the results show that – from the practitioner perspective – systems change for food in schools depends upon the right values, skills, and other qualities amongst those at the delivery end. As Almeida, Moore, and Barnes (2018) have pointed out for

environmental education, the biographies and identities of teachers have a critical role in effective implementation. These are not simply individual attributes but are cultivated through feelings of common goals and shared understanding with colleagues – often in different parts of the school organisation. This lends support to arguments that, in order for them to make the effort and bear the risks of changing the default system, practitioners benefit from being part of a (formal or informal) community of practice (Wenger 2011) and a context for diffused systems leadership (Keshavarz et al. 2010).

Through the project, individuals were identified within school systems who had taken some form of responsibility for implementing decisions for change: whether it be engagement in their role as a senior leader and making whole school changes, or as a support teacher putting pressure on the school's decision makers. Knowing how and who to go to was essential for change to be possible. As other studies have shown (e.g. Kimberlee et al. 2013) support teachers and non-teaching staff have a key but under-recognised role in affecting behaviour change in the development of an ISFS.

A theme emerging from the results shows that practitioners wanted to emphasise the importance of informality and enjoyment to motivate action over the course of time and to bridge interests between diverse students, staff, and the wider school community. Furthermore, the themes of rule bending, risk taking, making-do and resistance all illustrate aspects to systems change that rarely feature in policy protocols or intervention rule-books. These research findings link to learning from organisational studies and, notably Lipsky's (2010) concept of street-level bureaucracy, to show how front-line practitioners improvise and deviate from mainstream guidance to achieve their public service goals. These were themes that cut across national school contexts and circumstances of different levels of school resourcing.

All participating schools had noticed problems and recognised that the way food was integrated into the school system required change in their context; this was due to a number of reasons: including a response to global environmental politics, a desire for positive social interactions at meal times and a need to develop healthy eating practices in areas of deprivation. Measures that were implemented often focused on private sphere actions, for example encouraging children to eat well and compost food waste. Both Chawla and Flanders-Cushing (2007) and Aarnio-Linnanvuori (2019) note that these personal behavioural changes are often the goal of environmental initiatives in schools yet, to enable change these need to be combined with larger collective public changes. Within environmental politics, larger collective change could be framed around recent non-violent collective protest such as School for Climate Action led by Greta Thunberg, and Extinction Rebellion. Within participating schools, such an activist approach was observed where practitioners took on an explicit risk-taking role to effect change.

In addition to identifying a modelled approach to ISFS, what has also been identified is the importance of what projects are being integrated within the ISFS approach. Ensuring that schools promote environmental action is essential, but Chawla and Flanders-Cushing (2007) warn that it is not enough for schools to just promote any action for the environment: there is a need to emphasize the most strategic actions. Here, we have identified pro-environmental actions that school staff, in their everyday practice, perceived to be deliverable, motivational, and impactful.

While some of the themes identified in the results draw attention to the personal characteristics of practitioners, other themes highlight the importance of organisational processes. These include the need to lodge ways of working and cultural changes into the routines of schools. As wider literature makes clear, schools can be seen as learning organisations (Kools and Stoll 2016) that – in a supportive context – can iterate and accumulate solutions to problems and incorporate new ideas. This is particularly significant for school food systems reform given that this is just one – often marginal – agenda amongst many others in schools. Processes of embedding activities such as gardening, parent consultations or local food procurement therefore require recognition and incorporation into school policy and planning if they are to persist and develop over time.

A further dimension to embedding food system change is the transfer of learning between schools. This was a process exemplified in this study, but one that needed special grant funding conditions. The three school food NGOs involved in the programme were all well placed to facilitate contacts between practitioners in different schools and to promote the exchange of innovative practice. The ISFS approach adopted by each NGO acted as a point of reference and framework for action. Such organisations clearly have a role in scaling up and out food system change beyond the scale of individual schools (Pitt and Jones 2016) and develop credibility through their close dialogue with frontline practitioners. As Rickinson, Hall, and Reid (2016) argue for a sustainable schools programme, these agencies are often indirectly involved in 'influencing' change rather than delivering direct impacts in schools.

A strength of this study was the duration of the data collection over a two year period, across countries and cultural and educational differences. The action-research approach facilitated a community of practice among participants, which lead to the exchange of good practice as well as offering a source of inspiration and motivation. This supported different levels of participation, from peripheral to core participation (Wenger 2011). The research process involved developing themes for everyday practice through reflections and feedback with participants. A limitation of this approach is that the themes reflect study participant perspectives rather than the wider educational practitioner communities in the countries concerned. We should also note that the participants were likely to have positive perspectives on integrating food issues in education given the organisational commitments of their schools to this agenda.

As Wang and Stewart 2013 and Story, Nanney, and Schwartz 2009 also suggest, our study indicates that practitioners working in this field would benefit from professional development specifically on integrating food issues into school-based practices. Documented accounts of the current work of educational practitioners not only offer a basis for disseminating real-world learning, but also provides a platform for advancing teacher training and competency development in this field. Similarly, Bürgener and Barth (2018) with respect to sustainability education and Sutter et al. (2019) on food education, have highlighted the importance of raising standards of practice through building on the frontline innovations of practitioners.

Based on these initial understandings developed from exchange of ISFS -best practice, further insights are required into the innovation of pedagogical, didactical, educational and organisational transferable tools based on the initial inspiration from ISFS 'exchange of good practice'. Such understandings could support the development of the ISFS model to more schools in Europe and potentially other countries with similar conditions and needs. Recently, the EAT-lancet commission specified the important role of schools and integrated approaches in order to promote 'healthy food from sustainable food systems' (Willett et al. 2019). Such work has the potential to contribute with concrete solutions to the huge challenges caused by the current food- and health systems in Europe. Furthermore, these challenges are reflected in the UN's sustainable development goals and require greater attention in the international schools community.

Conclusions

Drawn from the three national settings of England, Denmark and the Czech Republic, the educational practitioners in this study identified contrasts in financial resources and staff autonomy but found shared concerns on the challenges changing the multiple aspects of food culture in school settings. Participants adopted perspectives and identified a range of actions to address common pedagogical challenges and create solutions in real-world practice settings. These 'everyday practices' included such themes as 'persistence, passion and belief'; 'bending the rules' 'supportive, respectful, and united teams'; 'having a holistic vision', 'resistance', and 'making-do'. Drawing upon an integrated school food system conceptual framework, the study suggests that these everyday practices have a critical role in supporting reform of food system issues in

schools. It also points towards the need for front-line practitioner knowledge exchange to scale up action on school-based food systems. This bottom-up action is significant because many school food system change programmes have focused on the implementation of time-limited, research based initiatives rather than the embedding of reforms under routine conditions in schools. Attention towards the everyday practices of staff is likely to have benefits in understanding how other spheres of environmental education, beyond food issues, are conducted and sustained in school settings.

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