ORIGINAL ARTICLE

Childcare 2030: On Using SDG's as a Framework for Implementing Sustainability in Two Day-Care Centres in Flanders

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Abstract

This article is based on a 2-year (2017–2019) project that aimed to find out in what ways and with what materials childcare settings can bring "raising for a sustainable society" into a lived practice and what kind of support they need to accomplish that. The project mainly consisted of an action research in two day-care centres for children younger than three in Flanders who worked on implementing "education for sustainable development". In this way, we hoped not only to find out what actions help to implement sustainability but also what structural changes are needed for a successful implementation. After discussions with stakeholders, the research team decided to use SDG's (sustainable development goals) as a framework for the project. This enabled a recognisable structure as well as a broad interpretation of sustainability, which would allow for a wide range of implementation actions. During the action research, it appeared to be difficult to come to an implementation, as practitioners experience a lot of barriers in working on sustainability. In this article, we discuss in what ways the SDG framework provided a stepstone to overcome barriers to work on sustainability and in what ways the framework did not serve this purpose or even created new barriers. In general, the SDG framework proves to be a good way to get acquainted with the complexity of sustainability and to work on a shared vision but it does not suffice to work on daily attitudes or embodied pedagogical practices. Such a goal would need the backup of other actions.

Keywords Education for sustainable development · SDG's · Staff · Early childhood education and care

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Résumé

Cet article est basé sur un projet de deux ans (2017-2019) qui visait à déterminer de quelle manière et avec quel matériel les structures d'accueil d'enfants peuvent faire de " l'éducation pour une société durable " une pratique vécue et de quel type de soutien elles ont besoin pour y parvenir. Le projet a principalement consisté en une recherche-action dans deux crèches pour enfants de moins de trois ans en Flandre qui ont travaillé la mise en oeuvre de "l'éducation pour un développement durable". De cette façon, nous espérions non seulement découvrir quelles actions aident à mettre en oeuvre la durabilité, mais aussi quels changements structurels sont nécessaires pour une mise en oeuvre réussie. Après des discussions avec les parties prenantes, l'équipe de recherche a décidé d'utiliser les ODD (objectifs de développement durable) comme cadre pour le projet. Cela a permis d'avoir une structure reconnaissable ainsi qu'une interprétation large de la durabilité, ce qui a permis un large éventail d'actions de mise en oeuvre. Au cours de la recherche, il s'est avéré difficile de parvenir à une mise en oeuvre, car les praticiens rencontrent de nombreux obstacles lorsqu'ils travaillent sur la durabilité. Dans cet article, nous discutons de la manière dont le cadre des ODD a permis de surmonter les obstacles au travail sur la durabilité et de la manière dont le cadre n'a pas servi cet objectif ou a même créé de nouveaux obstacles. En général, le cadre des ODD s'avère être un bon moyen de se familiariser avec la complexité de la durabilité et de travailler sur une vision partagée, mais il ne suffit pas pour travailler sur les attitudes quotidiennes ou les pratiques pédagogiques incarnées. Un tel objectif nécessiterait le soutien d'autres actions.

Resumen

Este artículo se basa en un proyecto de 2 años (2017-2019). Su objetivo fue averiguar de qué manera y con qué materiales los entornos de cuidado infantil pueden convertir la "crianza para una sociedad sostenible" en una práctica vivida y qué tipo de apoyo necesitan para lograr eso. El proyecto consistió principalmente en una investigación de acción en dos guarderías para niños menores de tres años en Flandes que trabajaron en la implementación de la "educación para el desarrollo sostenible". De esta manera, esperábamos no solo conocer qué acciones ayudan a implementar la sostenibilidad, sino también qué cambios estructurales se necesitan para una implementación exitosa. Después de discutir con las partes interesadas, el equipo de investigación decidió utilizar los ODS (objetivos de desarrollo sostenible) como marco de referencia para el proyecto. Esto permitió una estructura reconocible, así como una interpretación amplia de la sostenibilidad, lo que permitiría una amplia gama de acciones de implementación. Durante la investigación de acción, pareció ser difícil llegar a una implementación, ya que los profesionales experimentan muchas barreras al trabajar en la sostenibilidad. En este artículo, discutimos de qué manera el marco de los ODS proporcionó un trampolín para superar las barreras al trabajar en la sostenibilidad y de qué manera el marco no sirvió para este propósito o incluso creó nuevas barreras. En general, el marco de los ODS demuestra ser una buena manera de familiarizarse con la complejidad de la sostenibilidad y trabajar en una visión compartida, pero no es suficiente para trabajar en las actitudes cotidianas o en las prácticas pedagógicas incorporadas. Tal objetivo necesitaría el respaldo de otras acciones.

Introduction

In September 2017, the Antwerp Centre of Expertise in Pedagogical Support was happy to start a project on how education for sustainable development (ESD) could get a place in Flemish Early Childcare provisions for children up to 3 years of age. The project linked up with the Flemish Pedagogical Framework for Early Childcare Organisations, which defines "raising for a sustainable society" as a starting point and marks "creating ecological awareness" as one of the twelve tasks for childcare (Kind & Gezin, 2014). As both aspects were quite new in the field of early childhood provisions, there was a clear need for inspiration and lived practices on the subject. As a centre that conducts practice-oriented research and provides field support in childcare settings, we felt it to be our task to provide answers to this need. With a team of two researchers and one pedagogical coach, we tried to find answers to the research question: "in what ways and with what materials can childcare settings bring 'raising for a sustainable society' into a lived practice and what kind of support do they need to accomplish this?".

Before describing the project, we want to mark out that Flanders has a split system, which means that children up to 3 years old attend childcare organisations. From two and a half year onwards, up till 6 years children can attend a toddler school, which is a kind of pre-school. In relation to our project, this made it difficult to adopt materials developed for childcare settings in other countries (Jutvik & Lipiena, s.d.; Kita21, OMEP Resource Bank), as most countries work with children up till 6 years old. Nevertheless, several studies argue that very young children can already think about sustainability (Pramling Samuelsson & Kaga, 2008; Siraj-Blatchford, 2009), for instance, by focusing on lived experiences (Furu & Valkonen, 2021) and on children's systemic sensibilities (Reynolds et al., 2017). This encouraged us and the partaking childcare services to look for suitable actions. Another typical aspect of childcare in Flanders is that almost all practitioners have a vocational training, which does include reflection on practices but not on knowledge or ideology.

The Project *Childcare 2030*

In September 2017, the *Childcare 2030* project (Dom et al., 2017–2019) started with concise case studies of 9 childcare centres that advertised as being sustainable, mostly by accentuating both organisational and pedagogical aspects (Kita 21; OMEP, 2013). As Flanders has no such thing as a label for sustainable childcare, we selected the centres through checking what their website said on implementation of sustainable development in pedagogical and organisational aspects of the childcare and through discussing these aspects during short interviews by phone. Afterwards, we also interviewed experts in education for sustainable development. Since sustainable centres are the exception, the main part of the project consisted of an action research in two childcare settings. On an ideological level,

this method corresponds with the attention for participation and decent work in the literature and thinking about sustainability (Elliott & Davis, 2009; Lysgaard & Simovska, 2015; Laessoe, 2010; OMEP, 2013). Since practitioners are the ones who bring theoretical innovation into practice, they are best closely involved in finding out how this can be done. On a theoretical level, action research allowed us to find out how change could come about both on the action level and on the structural and symbolic level (Aldridge, 2017; Friedman, 2009; Kemmis, 2008; Woelders & Abma, 2019). In this way, we hoped not only to find out what actions help to implement sustainability but also what structural changes are needed for a successful implementation. Moreover, action research has proven to be an effective way to promote staff's reflection on their practice (Vandenbroeck et al., 2016).

Two childcare centres situated in the small city of Mechelen (appr. 80,000 inhabitants) answered our call for pilots. The first one (centre A) was part of the municipal group. The team, consisting of 1 coordinator, 1 parttime pedagogical coach, 16 practitioners and 2 logisticians, received about 68 children a day, in 5 age groups. In the other setting (centre B), 1 coordinator, 1 administrative director, 13 practitioners and 2 logisticians accommodated about 48 children in 3 age groups. Both settings reached a diverse group of families. They both had a lot of autonomy regarding their pedagogical approach and daily management. For decisions with a larger financial impact, such as changes in the building, general maintenance of the premises and purchase policies, they were dependent on decisions made on a central level.

Methodology

During the action research, practitioners decided themselves on the precise goals and focus for their settings. We worked in cycles of defining and undertaking actions, reflections on these actions, adjustments of actions or redefining goals (Friedman, 2009; Kemmis, 2008). When the participants decided that goals were reached, new goals were defined, leading to a new cycle. Examples of goals were "reducing food

Table 1 Overview of respondents who were interviewed

	Childcare centre A		Childcare centre B	
Interviews round 1				
Gender	Women	Men	Women	Men
	18	0	13	0
Roots in migration	Yes	No	Yes	No
	9	9	8	5
Interviews round 2				
Gender	Women	Men	Women	Men
	15	1	7	0
Roots in migration	Yes	No	Yes	No
	3	13	0	7

waste", "reducing package material", "offering children more nature experiences", "offering playing opportunities related to energy". Examples of actions were job shadowing in a sustainable childcare facility, reworking the outside space, switching from bottled water to tap water. During these cycles, practitioners reflected on the feasibility of implementing sustainability and on the meaning of sustainability for their childcare practice.

We collected data by making transcripts of all 41 meetings (21 in centre A, 20 in centre B) with practitioners and coordinators. Most meetings took about one hour. We also made notes of participatory observations (8 days in centre A, 7 in centre B), which we shared with practitioners. Apart from that, practitioners made power-point presentations of the jobshadowing and documented their actions by means of "pedagogical documentation" (Dahlberg et al., 2013), which consisted of collages of photographs with handwritten subtexts and with additional reflective notes. During the three team days on sustainability we organised in each setting, we made field notes, and afterwards, we wrote down our reflections. We also made transcripts of the two interviews with each of the 31 participants. The transcripts ranged from 8 to 18 pages, with 11 pages as an average. During the first interviews, we worked with photo elicitation. We asked practitioners to comment on photographs of pedagogical ways to work on sustainability, such as playing with mud, taking care of plants or playing in the rain and on photographs of organisational aspects such as washable cloths, bikes and vegetarian dishes. During the second interview round, we asked practitioners to reflect on the project's successes and failures. Table 1 gives an overview of the gender and roots of the practitioners we interviewed. The thematic analysis of these data was used as input for the reflective group discussions, which were transcribed as well, turning them into data.

The outcomes of the project were a published manual on how to implement sustainability (Dom et al., 2020), a short inspiring movie and loose materials such as blogposts and an infographic on washable nappies. For the current article, all data were analysed again, as this article deals with results in another form.

All practitioners gave their consent to take part in the activities, meetings, reflective sessions and interviews and to use the generated data during the process and, anonymised, in publications. Two practitioners did not want the interviews to be recorded and transcribed. They did allow the interviewer to take notes and use those for analysis. For the use of photographs and video, separate written consent was collected, both for practitioners and children.

The Role of SDG's in the Action Research

Writing the project proposal, we considered it logic to adhere it to the large international framework of SDG's (UN, 2015) by referring to its deadline with the title *Childcare 2030* (Dom et al., 2017–2019). Referring to a framework is not the same as making it an innovation's leading reference. Upon this, we decided at the start of the project, as three experts working for local NGO's on ESD (Djapo, GoodPlanet, de Helix) spoke out their preference for the framework in educational contexts. Moreover, the framework comes with clear communication and icons that a lot of

local governments, including Mechelen, had started to spread. Finally, international studies show that a lot of practitioners are uncertain as to what sustainability means (Dyment et al., 2014; Huggins & Evans, 2018a, 2018b), a finding that was confirmed in preparatory talks with practitioners and coordinators of childcare settings. The SDG framework could help to clarify what sustainability entails.

During the action research, the SDG framework was deployed in several ways, corresponding to the three conditions Jutvik and Lipiena (s.d.) described for implementing sustainability: knowledge, possibilities and motivation. In the beginning, it served as an introduction to sustainability, providing knowledge. We developed the "stressy SDG-game" (Dom et al., 2020), during which small groups of practitioners received 40 assignments, ranging from collecting four ecological cosmetics over solving a riddle on fair work to finding out how the childcare setting's bank performs on human rights and climate change through an online scan (Bankwijzer, s.d.). Afterwards, groups could see that each assignment related to one of the SDG's. This provided opportunities to talk about the many aspects of sustainability. Thus, the SDG framework was also used to enhance dialogue about sustainability and by doing so, working on a shared view on sustainability in childcare and on motivation. To enable this, we developed several other methods, for instance, an SDG-memory and "investigating walks" in the neighbourhood, meant to discuss the different manifestations of a single SDG. SDG's also were a stepping stone to formulate specific goals during the action research. The broad spectrum of the whole framework allowed practitioners to detect possibilities and select those themes they would like to work on. During this process, existing materials on SDG's such as leaflets and posters provided the knowledge to see the possible scopes of each SDG for childcare. Finally, SDG's provided the framework to communicate with parents about the project. In each communication about the project, SDG's were mentioned and large reusable prints of all 17 icons moved from one place in the centre to another.

Main Findings of the Project

Before moving to a discussion on the use of the SDG framework in turning "raising children for a sustainable society" into a lived practice in childcare settings, we briefly present the six main findings of our *Childcare 2030* project (Dom et al., 2017–2019) and separately, our five most important findings on the use of the SDG framework during this project. These findings are necessary as a step towards the discussion, conclusion and recommendations.

1. An Observable Basis Brings Motivation

Already at the project's starting sessions, practitioners wanted to explore what a sustainable childcare would look like. In the group discussions, it soon became clear that "raising for a sustainable society" needed a practical, observable basis, that makes the reconversion visible and palpable, both for children and for practitioners. In both settings, the outdoor space was refurbished. In Centre A, it was

designed by a professional landscaper. The stone courtyard was turned over into a green oasis, with a variety of plants and flowers, slopes and a kitchen garden, offering opportunities for discovery and play. A separate space for small children prevented them to be overrun by enthousiastic toddlers. Centre B would move within 2 years and could therefore not make such investments. But practitioners build a wooden outdoor kitchen and climbing installations with used materials, provided by parents and neighbours. The gardens seemed to be the best reminders of the sustainability project, as they combined several aspects of it: life on land (SDG 15) and on water (SDG 14) but also sustainable production (SDG 12). Other logistic elements completed the observable basis, such as using washable wipes, ecological cleaning and caring products and drinking tap water. One group decided to change the room's layout, as they noticed that the small fences meant to create tranquillity often caused disputes among the children (SDG 16).

The material changes functioned both as a reminder of sustainability and as a starting point for reflection on implementing sustainability. Thus, they supported the "delicate empiricism", a holistic way of understanding based on Goethe, that some publications on ESD consider a fruitful approach (Bradley, 2011; Ilhéu & Valente, 2019). The changes also fit perfectly in the "whole school" or "whole institution" approach (Elliot & Davis, 2009; Ferreira et al., 2006; Rieckmann, 2018). This states that content work on sustainable development is best embedded in an organisational whole that embraces sustainability in all its aspects. Research on children's development adheres to the whole institution as well, showing that children learn by observing their surroundings (Ewert et al., 2005; Van Elk & Hunnius, 2010).

Although they did never formulate it as such, practitioners seemed to find relief in the observable basis of the project, as if it prevented the reconversions to be solely dependent on their exemplary behaviour. We conclude this from the analysis of the final interviews. A practitioner, for instance, told us: "I noticed that playing in the garden with the cooking pots and spoons, the children really adore it. It is something that they are not allowed to do at home, but here they are (…). They have a lot of toys but what they like most is playing with real materials outside". All practitioners refer to the observable basis as the main success of the project while they describe their pedagogical approaches as a burden or a possible source of conflict among colleagues: "We brought in autumn leaves, in a basket. But then you really have to keep an eye on the children. They put the leaves in their mouths, the leaves are sticky. It is not easy".

2. Context and Regulations Matter

Another finding was that the organisational circumstances of childcare in Flanders make it difficult to work on sustainability. With a ratio of one adult to eight (or even nine) children and hardly any financial means for working time without children, opportunities for joint reflection are scarce. Moreover, the staff composition continuously changed, often because of long-standing illness or pregnancy, but as well because staff members changed jobs or got transferred. In Centre B, only eight of the initially seventeen staff members were left by the end of the project. And

two of these eight had been absent for more than 2 weeks. A practitioner stressed the impact of these staff matters: "you see, sustainability, it is a must but is it possible, that is a huge question mark". Another one put it in this way: "You are trying to support us, but like now. How shall I put it? Like now there is a lack of staff and then it adds up to that. It doesn't work. Sometimes work pressure is very high and then sustainability comes on top of that". Theoretically, new practitioners could easily be drawn into the project but in the daily rush, the "what" of some actions was explained and not the "why", leaving the SDG's out of scope. Moreover, we noticed a dual evolution among practitioners: on the one hand, the support for ongoing actions was growing, while on the other, support for new actions was diminishing, as if a limit of possible changes was reached.

3. Private Experiences and Influences Matter

The staff changes made it difficult to create a shared view on sustainability. Only two weeks after the project's closure, some practitioners could not give examples of actions leading to sustainability: *"I really have to think. It is a long time ago".* Other practitioners could discuss a lot of actions and had also changed their private lifestyle. This huge difference in reactions can be explained by private experiences and influences. One practitioner, for instance, referred to her youth in Morocco: "Earlier, our parents, I speak about my own country, they did not have these wet wipes. We just used water". For others, wet wipes had been a normal object for all of their lives, study time and working career. The impact of private experiences revealed that the project, although practitioners found it intensive, could only create small changes and was unable to thoroughly alter private views: "Nobody has done this reluctantly, but there are people who are more conscious about it and will keep on doing this but others will say: it is over". Others confirmed that they did not consider sustainability to be at the core of their job, allowing for non-sustainable choices: "the children come first. I do know that it is not good for the environment, but (silence)".

4. Ideology Should not be Underestimated

Some implementing actions interfered with the personal habits and beliefs practitioners cherished, to such an extent that fierce group discussions arose. The most contested topics were using washable wipes and serving tap water. These actions appeared to put at stake the existing norms on hygiene and health and to influence the work comfort. Some practitioners became very emotional in the discussions, others kept quiet. In the interviews at the end of the project, we saw no correlation between keeping quiet and being in favour of or against an action. In the end, both managers forced the switch to serving tap water but the use of washable wipes was postponed. Afterwards, we noticed that some practitioners refused to drink tap water themselves, although they served it to the children and although they affirmed that this was an important step in implementing sustainability. These practitioners were reluctant to talk about their refusal to drink tap water. Some said they never drank

water, others that they did not like the taste and a few were afraid of diseases or infections.

5. Group Processes are Important

Apart from individual beliefs and comfort, group processes played as well. Both in group sessions and interviews, practitioners were reluctant to discuss changes they knew some of their colleagues would never agree on, such as cycling to work or using public transport. They emphasised the importance of freedom of choice and respect for private circumstances. Sustainability was clearly a socially fragile theme and political and ideological discussions were avoided. Still, some practitioners mentioned their frustration because some colleagues refused changes: "some people are strange; like everything that is new cannot possible be good or they adapt difficult to new things. I do not understand why they are against everything".

6. Starting is Easier Than Transforming

During our visits to existing sustainable childcare centres, we saw that a shared view on sustainability is possible. However, these good practices worked on sustainability from the very beginning. New staff members know they will have to adhere to this central view. A practitioner who went jobshadowing put it as follows: "If you apply for a job in such a service, then you agree with their view, otherwise you would not apply. That is different for the colleagues working here". Transforming an existing childcare to a sustainable one takes another type of intervention and will probably work better when there is already a culture of ideological discussions, although we haven't been able to test this.

Findings on Working with the SDG Framework

Regarding the use of the SDG framework, the project led to five specific findings that will feed the discussion on what aspects of the SDG framework can help implementing sustainability in childcare and under which circumstances this could work.

1. Broadening the perspective

As we had expected, the SDG framework turned out to broaden the staff's perspective on sustainability. After the introductory "stressy SDG-game", practitioner testified on being happy to see other themes than climate change coming into focus: "Peace for instance, I initially did not associate with sustainability". Realising the broadness of the framework helped practitioners to link SDG's to their pedagogical practice: for each one of the SDG's, they could easily formulate examples of practices or procedures that contribute to it. It also turned out that colleagues classified the same practice under different SDG's. Discussing this, practitioners discovered

how the goals relate to one another (Pradhan et al. 2017), which opened up the pathway to discussing a whole organisation approach.

2.   A starting point to see opportunities

Apart from serving as a frame to link up existing practices, the SDG framework proved helpful in seeing gaps and opportunities for sustainable innovations. For some SDG's, practitioners could easily find innovations themselves, such as increasing the time spent outdoors or playing with rest materials for the SDG's on good health and well-being (SDG 3) and life on land (SDG 15). For other SDG's, such as the one on peace, justice and strong institutions (SDG 16), the teams needed suggestions before they saw links with their pedagogical practices. In the end, this SDG caught practitioners to such an extent that they chose to work on non-violent communication. This theme is clearly narrowing down the scope of the SDG but it is in line with the building of "competencies related to empathy, solidarity and action-taking" that UNESCO (2020) promotes in the Education 2030 publications.

3.   Too broad to remember

The broadness of the framework also had its downside. It turned out that practitioners easily forgot about it, even when the symbols stayed visible in their setting. We introduced the framework in January 2018, but by September 2018, a lot of practitioners could not remember what SDG's were. Hence, the SDG Memory Game we developed, became much more a memory game than the discussion game we had planned it to be. In between January and September, we had been narrowing down the broad framework into specific goals, whereupon practitioners remembered the goals they had chosen and formulated but not the holistic framework they were based on.

4.   An instrument of power

Another finding about the SDG framework is the political dimension practitioners associate it with, as it has been developed by people with power. One practitioner formulated this view rather indirect but firm: "Do we really have to work on that? Let the big shots work on it". Another one advised "go to large companies. Really, you need to address them". As we discussed in the project findings, political and ideological subjects were avoided in the childcare settings, mainly because they could harm the group balance but power hierarchies in society were sharply felt and formulated.

5.   All or nothing can be too much

A last finding can both be considered an advantage and a disadvantage: the SDG framework stresses that SDG's should be considered in correlation and that organisations should at least try to address the complete framework (Pradhan et al., 2017).

Although this helps to enhance a whole institution approach, it makes it difficult to implement the framework in an existing organisation with mature procedures and habits. It is tempting then, to stick to quick wins that fit well into daily practices because far reaching changes are often not in the hands of a team or risk to create dissent. A practitioner said: "During this project, I went to a childcare service. I can't remember where it was. It was so wonderful over there. But it has to be a view of the whole childcare service then. We can change small things. But if you want to change more, I think you need people that are high up".

Discussion

The above-mentioned findings on the project-level seem to correlate with three different aspects of the SDG framework: its institutional nature, its need for knowledge along with its transformative purpose and its systemic character. We discuss these correlations to come to recommendations on the use of the SDG framework for implementing sustainability in daycare centres.

1. SDG's are an Institutional Framework

The institutional nature of the SDG framework has the advantage that it has been negotiated on different levels, a time-consuming activity that can be skipped by organisations that adopt it. Also, it comes with a clear communication campaign. Both advantages show that SDG's are supported by power structures and this can reduce individuals' agency in choosing their interpretation of sustainability.

By the start of our project, we used findings of Ballard (2005) and Jutvik and Lipiena (s.d.) on the necessary conditions for implementing sustainability. Ballard (2005) defined three conditions for success: Awareness, Agency and Association. We found that the SDG framework could respond to all three conditions. Indeed, the framework strengthened practitioner's awareness and opened up possibilities to associate with colleagues. But agency was an issue, not so much because practitioners did not get the opportunity to choose a framework they preferred but because they associated the framework of our choice with power. The only way to regain their agency was to refuse to partake in some actions, which they justified by stating that others would have more impact and more agency to change things.

2. Using the SDG Framework Needs a Knowledge Base

Jutvik and Lipiena (s.d.) describe motivation, knowledge and possibilities as necessary for a successful reconversion towards sustainable childcare. For these conditions, we used the SDG framework. Leaflets and publications provided knowledge and functioned as a starting point to find innovative possibilities. Soon it became clear that participants constantly felt that they lacked the necessary knowledge to choose meaningful transformations for their context or to translate general information on SDG's to childcare settings. Partly, our SDG-game, that practitioners

particularly liked, provided such possible translations, such as looking for toys that have been produced locally, collecting leaves and other natural elements to play with and purchasing ecological care products for SDG 15 *Life on land*. Still, a lot of information was lacking, both on organising childcare sustainably as on ESD for very young children. To put it in UNESCO (2010) terms: "the science for sustainability" in childcare does not suffice: there is no repository that supports transformations.

Knowing that sustainable development typically addresses wicked problems and controversies (Elam et al., 2018; Venturini, 2010) and is transformative in nature (Romero-Goyeneche et al., 2021), it is not surprising that it is difficult to under-pin transformations with clear, easy to interpret knowledge. Moreover, there is not a lot of knowledge accumulated on interactions between SDG's (Nilsson et al., 2018) and during changes, existing knowledge needs to be frequently adapted to the transformed situation.

An example of a controversy during the project illustrates how interactions between SDG's are difficult to grasp. The subject were washable nappies. Nearly all practitioners were reluctant to work with these and brought in arguments on water pollution (SDG 14) and on energy use (SDG 7) during washing. Responsible consumption and production (SDG 12) and waste management (SDG 15) remained out of scope in the discussion. Practitioners also pointed out that it was difficult to find reliable and unambiguous information on nappies. We ended up reading the very small amount of available studies comparing the environmental impact of washable nappies with that of disposable versions (Willockx, 2019a, 2019b). That is a difficult task, as the results depend on a lot of variables that differ according to the context. Based on this search, we developed a factsheet (Willockx, 2019a) and wrote blog-posts (Willockx, 2019a, 2019b) comparing washable with disposable nappies and explaining the conditions under which washable nappies would be more sustainable. This work did not convince the practitioners. "I do not like the idea" a practitioner kept on saying and another one said she would wait for "sustainable disposable alternatives", although the blogposts made it clear that it was unlikely that these should be developed within the next 10 years.

More knowledge did not seem to be convincing when a value system, beliefs or the burden of daily tasks were at stake. We tried to discuss interactions between SDG's, stressing that a drawback regarding the use of water could relate to less use of land. This could not convince participants nor could it help to accentuate the transformative or moral character of the SDG framework, which strives for a more just world. We feel that in such paralysing discussions, it might have helped to try Venturini's controversy mapping (Venturini, 2010), which visualises the complexity of the controversy. But this is a time-consuming method that needs some practic-ing by the participants. So we decided to focus on other possibilities of sustainable changes (Jutvik & Lipiena, s.d.), for which we did see motivation.

3.   Implementing the SDG Framework Needs System Thinking

The deadlock on the washable nappies also demonstrates how in the "messy task of implementing SDG's" (Reynolds et al., 2017: 694) a tension appears between

system thinking as a holistic process and the systematic engagement which is needed to shape such a process (Reynolds et al., 2017: 694). In order to systematise the transformative process, participants formulated palpable goals, inspired by the SDG framework. Precisely these goals sometimes blur the sight on the holistic whole, to such a point that the practitioners actually forgot about the framework. Solving this tension between system thinking and a systematic process is a difficult task, which asks for system thinking to be integrated in a daily praxis. This is "no quick-fix" (Reynolds et al., 2017: 694). In other words, it might have worked to link up the nappies to the organisational, pedagogical, relational and ideological aspects of childcare, as these obviously played an important role in practitioners' reluctance to use them.

For this complex systemic thinking, a learning community is necessary. It also moves sustainability away from an individual responsibility towards a collective one (Furu & Valkonen, 2021), while in our project only palpable changes allowed to avoid an individual responsibility. Precisely this culture of systemic thinking in a learning community had not yet been developed in the participating organisations. Luckily, working with the SDG framework could mean a start for it. For some practitioners, the collective level enhanced their learning: "In the beginning, I was thinking like, meat, how does that relate to sustainability? But it was nice to talk about that with your colleagues, in a way that, yes, what goes wrong and what can become better. I always had my reservations about things but in the end, they always disappeared".

Such a process also asks for strong and inspiring leadership (Pramling Samuelsson & Park, 2017; United Nations, 2021). In our project, the coordinators had invited us to work on sustainability because they did not feel up to this task by themselves. To avoid breaking into their leadership, we introduced a pedagogical coach who worked with the teams on sustainability. The coach was part of the research team but had another function, working on the connection between relational and content matter. She could spend about 6 h every 2 weeks in each team. This was not enough to establish systemic thinking, but it did provide a useful start for a learning community.

Conclusion and Recommendations

Recently, international organisations such as UNESCO have chosen the SDG's as the core perspective for ESD, mainly because of their broad perspective, in combination with clearly defined goals (UNESCO, 2020). These advantages also emerged during our action research. Nevertheless, implementing the SDG framework is a messy process, balancing between a systemic approach and a suitable kind of systematising. Ingredients for a fruitful balance will depend on the context, but it is clear that it should be sought at a group level rather than at an individual level.

What is not so clear is who will facilitate this process. This person needs to guarantee practitioner's autonomy as well as their discretionary possibilities. This task asks for inspirational leadership as well as for an already existing relationship with the team and an awareness of the relational role of power. Knowledge, for instance,

is also power, just as time to work on a project can create more power. For the coach, this turned out to be a difficult task, for which she did not have enough time. Also for the participating practitioners, lack of time turned out to be one of the barriers during this project. But time is no neutral category, as one makes time for the things one considers to be important. This was the crux in the action research. Practitioners helped us to realise this: "You know what it is, all of us want to make things go fast, and that doesn't help".

The longing for fast changes formed a barrier, as the systemic nature of the SDG framework asks for no less than new transformational pedagogies (Ärlemalm-Hagsér & Elliot, 2017). A pedagogical framework that includes sustainability is just a starting point for such pedagogies. The knowledge on which it is based needs to be transformed into "embodied practices" (Furu & Heilala, 2021: 19). Before achieving this, learning communities are needed, that deepen educator's understanding (Inoue et al., 2017). Therefore, for everyone who wants to work with the SDG framework to implement sustainability in childcare, we would recommend to work on a learning community first and to practice systemic thinking on less controversial subjects. Both elements will contribute to the establishing of an embodied pedagogical practice while also creating a shared vocabulary for reflective discussions in the learning community. Moreover, a learning community can engage in finding access to the knowledge it needs, in mapping controversies and in investigating power relationships. This process will need a good facilitator who systematises the process without losing sight on the holistic whole. And who is not afraid to discuss the thin line between knowledge and ideology. Our team was not up to this task, although we hope it will be for a next pilot.

Declarations

Conflict of interest The authors declare that they have no conflict of interests.

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