Learning in Global Settings:
developing transitions for meaning-making

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ABSTRACT

Global teaching and learning for sustainable development reaches from the classroom to the world outside, and is therefore a particularly interesting setting for practicing transitions skills. The article suggests a number of features perceived as crucial in developing young people's capability to act in a changing world and under circumstances that are difficult to predict. The suggestions are based on an empirical study of the Lund Calling project, which aimed at implementing a web-based international programme for teaching preventive environmental strategies in Swedish secondary schools. The article first touches on some of the conditions in Sweden that particularly impact young people's transition to adulthood. Related research in sustainability education is also briefly outlined. Knowledge capability theory is used to discuss results from the empirical study of the Lund Calling project, where interviews were conducted with secondary school students, teachers and headmasters. Based on these interviews, features that appear to be particularly relevant as transition skills in global learning for sustainable development include transdisciplinary action, democratic collaborative action, as well as self-directed and independent initiative. The article concludes that young people today cannot, as in earlier periods of history, base their actions entirely on the traditions of the family or community. Instead, they also need to learn to form their own communities, capable of acting on both local and global levels. Education here plays an important role, to develop necessary transition skills that enable young people to be prepared for a rapidly changing and uncertain world.

Introduction

Since the 1960s, educational structures in Sweden have been geared to support lifelong learning, and minimise the reproduction of social inequalities. Adult education has been encouraged, alternating studies and work, as well as reducing thresholds between theoretical and practical programmes (Boström, Boudard & Siminou, 2001). Study grants and benefits allowed young people in Sweden to rapidly become financially independent from their families. Growing up in Sweden is often conceptualised as establishing an identity (becoming a member of a group), and varying degrees of detachment from the adolescent's childhood environment. Since the role of family is limited, discussions on transition have tended to consider issues of identity formation and social reproduction relating to place, ethnicity or

language (Quist & Svendsen, 2010; Bäckman, 2009). We can thus discern connections between the notions of growing up, becoming financially independent, and individualism (cf. Beck & Beck-Gernsheim, 2002; Hofstede, 2001).

In Sweden, as elsewhere, the purpose of education has had to change in recent decades. Whereas it was seen primarily as a means of transmitting known ways of dealing with familiar problems, today it has to equip young people for an uncertain future. In this paper we re-conceptualise transition as gaining increased competence to act in various arenas. For example to interact productively with young people from different backgrounds, to understand complex issues in a rapidly changing world, to deal with change and uncertainty, and to take action for sustainability, locally and globally. In this sense, transition to adulthood involves passing from merely learning about the problems society is facing, to being capable of working proactively towards solutions.

Drawing on a study of a global web-based course on preventive environmental strategies (hereafter known as 'Lund Calling', this paper considers education from the perspective of learning 'knowledge capabilities' which, it argues, young people will need for informed and effective action in various arenas, locally and globally.

The paper begins with an overview of the social conditions in Sweden impacting on young people's transitions to adulthood and a summary of current conceptualisations of transition. These are followed by a review of the research on environmental and sustainability education. Knowledge capability theory is then discussed in the context of preparing young people for situations that cannot be defined in advance and provides the conceptual framework for the empirical study on Lund Calling which explores transition skills in relation to a wide range of knowledge capabilities developed in educational settings designed to integrate values, attitudes, capabilities and knowledge in a holistic manner.

Passage to adulthood in Sweden

Sweden has long occupied a particular position in Europe, with respect to its unique educational system, and an advanced form of welfare state that has served as a model for projects elsewhere (Dewan, 2011; Freeman, Topel & Swedenborg, 1997). Particularities of the educational and welfare systems shape the conditions for reaching adulthood, and also profoundly influence conceptualisations of identity and transition. Rather than any one specific aspect in itself, it is the combination of various factors which contributes to creating a unique climate.

From an educational perspective, Sweden has been characterised by fluidity and lifelong learning. Unlike most other European countries, there was no tight separation between practical and theoretical paths of study at secondary levels (Boström, Boudard & Siminou, 2001). All paths of study gave access to higher education, and if a particular required subject was lacking, a well-developed system of adult education made that comparatively easy to rectify. The course of study through life was therefore not marked by clearly separated cycles or decisions which would definitely determine an individual's future profession. Alternating

work and studies all through life was encouraged. Vocational programmes in Sweden had a stronger theoretical component than is often the case, while in higher education, theoretical who found the means to meet practical perspectives were considered to complement each other. Collaboration between educational institutions and the surrounding society was promoted (Boström, Boudard & Siminou, 2001). Historically, Sweden has also had a strong tradition of popular education resulting in an emphasis on reflection and self-directed learning. Not centrally defined by the school programmes, the lifelong learning process was seen to be managed by the individual, and the varying needs for additional training or knowledge in the course of his or her working life. At the same time, democracy was viewed as participatory, rather than merely representative, and training young people for active participation in a democratic society has been a central notion in the national school curriculum (Östman, 1995). This is expressed in the opening chapter of the previous Swedish national curriculum for non-compulsory school (Lpf94), stipulating that:

> It is not in itself sufficient that education imparts knowledge of fundamental democratic values. It must also be carried out using democratic working methods and develop the pupils' ability and willingness to take personal responsibility and participate actively in civic life.

In Sweden, teaching skills for democracy has also been seen as a particularly important dimension of environmental sustainability education so that young people are able to see themselves as part of a common effort (SOU, 2004; Öhman, 2008). Although the education system has recently witnessed a number of changes, and the participatory aspect of Swedish democracy is in some measure less emphasised, it still continues to have an impact.

Young people in Sweden have benefited from exceptional financial autonomy. Unemployment has been relatively low, and the insurance system allowed them to get by between jobs. Past policies favoured affordable apartments for rent, rather than for sale. Additionally, housing benefits helped bridge the gap when incomes were low. Expensive insurance was not been needed, since public health services are free, while public transport has allowed physical mobility for all. Education – including higher education – has not been financed by fees and a well-developed system of study grants aimed to ensure that approximately half the population would eventually pursue their studies at tertiary levels. At the same time, thanks to various social services, parents did not have to rely on the help of their children to take care of younger siblings, disabled relatives or failing grandparents. After finishing upper secondary school, and even before, young people have therefore been free to leave home and set up their own households, reflecting Swedish family values (see Hofstede, 2001).

On the other hand, while several factors have worked in the direction of individual autonomy, the complexities of modern society simultaneously entails increasing reliance on experts and institutions that fall outside the control of the individual. Young people have to spend an ever longer period of their lives training to be able to participate in working life and other arenas of society. Even this training does not necessarily equip them to grasp the complex issues that characterise our societies, or enable them to act adequately (see Giddens, 1990). Additionally, the world that young people grow up in is not merely constituted by their immediate local and

national environment. Globalisation reaches deeply into our everyday lives. Exposure to a flood of information and impressions, news from all parts of the planet, searching for knowledge on the internet, and networking through social media are conspicuous parts of youth culture today (Mediappro, 2006). Global identification rather than national identification, is by many young people felt to be more rewarding for identifying transculturally (Quist & Svendsen, 2010). Space-time compression and virtual realities increasingly affect basic conditions for education.

This is why we here propose a conceptualisation of transition to adulthood as gaining the competence to act locally and globally in a changing world, and to form the communities of learning and action necessary for this purpose.

Conceptualisation of transition

Students´ experiences of learning for an unknown future (Johansson, Kopciwicz & Dahlgren, 2008), makes the transition process challenging, from being a student to becoming an adult looking for jobs, and entering working life. The study by Johansson, Kopciwicz & Dahlgren found that Swedish students generally expressed more positive views of their future compared with Polish students. Nevertheless, they also expressed concerns about how well their knowledge and skills matched demands in the labour market. For instance, students wondered what a reliable 'door-opener' to the labour market might look like. Jungert (2009) stresses that generic skills are more valuable than subject-related knowledge in the job search process, accompanied by self-reliance, flexibility and adaptability.

With increasing unemployment among young people, concerns about employability are growing. Nevertheless, at an individual level, the passage from adolescence to adulthood in Sweden has not been primarily defined by questions related to the material survival of the adolescent or the family. The exceptional material independence from which Swedish youth benefited has led to corresponding independence and social mobility in the choice of profession, place of residence, choice of partner or 'lifestyle'. So while transition in Sweden, as elsewhere, involves a redefinition of roles and emotions connected to a process of individuation at a psychological level, material independence has not been an equally central issue as elsewhere (cf. Ahier & Moore, 1999). Indeed, for more than half a century, one of the guiding principles in the establishment of Swedish social institutions has been to enable social mobility, and avoid the reproduction of class structures.

As a result, theoretical conceptualisations of transition in Scandinavia generally, and Sweden more particularly, do not focus on the reproduction of class, but rather consider cultural or linguistic aspects. It is for instance argued that in the ethnically mixed areas of the larger cities, ethnicity and linguistic varieties play an important role for young people constructing social meaning. 'Belonging' relates to particular parts of town or neighbourhoods, as well as to a larger transcultural global context (Quist & Svendsen, 2010). Bäckman (2009) also stresses the importance of the area young people grow up in, and feelings of belonging related to a neighbourhood. She describes how young people use creatively elements from their

ethnic or social heritage to actively construct their own identities. But belonging is not only linked to a particular urban district or suburb. Quist and Svendsen observe that global and local meanings interconnect, and while some meanings are specifically local, other social meanings of ethnicity depend on both global and local factors, and are 'transportable' (Quist & Svendsen, p. xxii).

Identity formation among young people with various ethnic backgrounds has received considerable attention in Sweden, contributing to a picture of society as a patchwork of specific groups and subcultures. However, not only do institutions and structures work in favour of individual autonomy in relation to family; similar mechanisms affect the individual's relationship to communities or ethnic groups. This does not necessarily reduce young people's needs for social belonging and recognition, nor the associated impacts on mental health if these are absent. Nevertheless, when the individual no longer depends on his or her community for material survival, adherence to cultural codes and values loses its function as a fundamental condition for survival. The adolescent becomes freer to define his or her identity, as an individual (the 'do-it-yourself' biography, see Hitzler & Honer, 1994), rather than in terms of belonging to traditional communities. In many respects, patterns in Sweden correspond quite closely to the individualised society described in *Individualization: Institutionalized Individualism and its Social and Political Consequences* (Beck & Beck-Gernsheim, 2002).

In general, young people in Sweden are thus seen as being autonomous individuals, free to choose their own identity and life-course. Prevalent conceptualisations of transition have certain limitations, however. Röpke (1999) argues that contemporary ways of constructing identities largely revolve around patterns of consumption, rather than expressing young people's personal visions for the future. Also, recent research suggests that social and technological changes such as access to digital media do not automatically have an emancipating effect. For instance, Danielsson (2010) observes that while young men from privileged backgrounds engage in digital practices which they perceive as valued in society, young men from less privileged backgrounds tend to use the media in manners that are socially devalued. Likewise, structural factors influence how various groups are affected by change, and the choices that are open to them with respect to mobility. The fact that urban youth is able to relate to or identify with certain globalised aspects in youth culture, does not mean that all benefit from the same chances on global labour markets (cf. Ball, Maguire & Macrae, 2000). Social and technological changes are opening unequal horizons. In other words, today young people's cultural, class and ethnic backgrounds are not necessarily reproduced in their traditional forms, they instead are susceptible to hybridised forms of global youth culture, positions and opportunities which continue to be unequally distributed. Although, for instance, access to higher education in Sweden was facilitated by the reforms of the 1960s and 1970s, a gap in recruitment and completion rates can still be noticed at tertiary levels, while the 2009 PISA results for 15 year olds (www.oecd.org) suggest that this gap is again widening. Despite the relatively egalitarian character of Swedish society, young people do not have equal opportunities to consciously shape their identities, or become 'pilots' in

their own lives (Côté, 1996). School remains a conservative force in this respect (Bourdieu & Passeron, 1990), unless special efforts are made to foster empowerment.

The competence to act in a changing world

While societal developments have affected traditional ways of reaching adulthood, far-reaching changes have also led to complex and challenging problems at both regional and global levels, requiring urgent action. Since the Brundtland report (Brundtland, 1987), education for sustainable development has rapidly evolved, and also been the object of research and educational reflection. In this section, we summarise aspects of the field, focusing on global learning.

Sund and Wickman (2008) observe that the individual teacher not only requires knowledge of the subject matter, but also has to adapt to learning situations in a flexible way. They link education for sustainable development to the abilities required for open-ended learning. A central role of learning is to enable the learners to develop their ability to set the agenda for learning themselves (Sund and Wickman p. 160), which is also an important dimension of self-directed learning (Booth & Anderberg, 2005). A similar type of ability is put forward by Rauch and Steiner (2006, p. 124), who argue that 'learning aims at acquiring a reflective ability to shape the world', rather than adopting a centrally proposed set of action patterns uncritically'. Education would therefore need to consider both self-development and self-determination of individuals in interaction with others, resulting in 'the ability to contribute in a reflective and responsible manner to the developing of society for a sustainable future' (Sund and Wickman, p. 124). Communities of learners would reflect in shared settings, identifying options for action. This type of learning involves a dimension of training for democracy. A similar view on Global Learning for Sustainable Development (GLSD) is proposed by Anderberg, Nordén and Hansson (2009), who focus the potential of shaping part-to-whole relationships between process and content in the communities of learners, collaborating in a web-based global classroom. Using global classrooms to discuss and reflect on complex problems additionally has the potential to support the development of intercultural and transdisciplinary capabilities.

Öhman and Östman (2008) stress that students need *the ability to interact with others* with diverging ideas and opinions, while Kronlid (2009) argues that 'learning takes place in spaces of capabilities, in expanded spaces of beings and doings' (Kronlid, p. 34). In different concrete ways, shared global problems systematically improve learning conditions, when the learners' spaces for developing capabilities are enriched through contacts with other young people across the world. Bruun Jensen and Schnack (1994) maintain that *action competence* can be developed by using situations involving conflicting interests as a starting point. Mogensen and Schnack (2010) further expand the traditional notion of competence, and focus on more critical-constructive conceptions of action competence. Almers (2009) has described a form of youth action competence developed through informal learning, and contacts outside the traditional classroom.

Another aspect of sustainability education is working with sufficiently *complex cases and authentic material* (Ideland & Malmberg, 2010). When school systems do not sufficiently address issues young people feel are urgent, or when school does not invest enough attention to teaching skills which are relevant in this respect, pupils may become estranged and lose motivation. Real cases presented as authentic dilemmas in society instead have the potential to motivate and engage students learning socio-scientific issues (Aikenhead, 2006, 2007 ; Oscarsson, Jidesjö, Karlsson & Strömdahl, 2009). According to Ekborg, Ideland and Malmberg (2009), school must offer students opportunities to develop skills and competence to take part in the official debate concerning authentic and contemporary challenges. To gain competence in taking informed decisions, students need training in cost-benefit analyses, judging risks, and taking a stand. They also need to develop knowledge-based opinions concerning dilemmas in contemporary society. They should be able to convince others about the way they think socio-scientific issues should be handled at different levels, whether individually, locally, nationally or globally. The competence to act and awareness of oneself as a decision-maker, actor in relevant citizenship issues, are qualities that can be developed at school, by critical examination of authentic everyday cases. Such students gain a higher level of commitment; rather than simply consuming knowledge, they learn how to produce knowledge. Thereby, relevant and authentic knowledge formation occurs, from a socio-scientific perspective of citizenship and developed literacy (Aikenhead, 2006; Ekborg, Ideland & Malmberg, 2009).

In sustainability education, it is seen as essential that students are offered opportunities to develop *knowledge capabilities* (Bowden 2004), that allow them to deal with complex and entirely new situations. In this respect, students also require deductive thinking skills (Sund & Wickman, 2008). But reasoning cannot be trained as a 'skill' detached from context. A study by Nordén and Anderberg (2011) suggests that knowledge capabilities are important, because capabilities are developed and related to the particular content and problem upon which it is focused (Nordén & Anderberg, 2010). In other words, knowledge capabilities cannot be seen as a matter of acquiring a set of isolated abilities or skills. This distinguishes the notion of *capabilities* from the idea of competencies, since the latter are taught in terms of solving defined issues in predicted situations. It is therefore not possible to develop knowledge capability in oversimplified problem-solving situations.

Sustainability education reaches from the classroom to the world outside, and can therefore serve as a bridge for transition, as well as an opportunity to develop and practice key capabilities. Rather than considering subject matter as knowledge per se, in this article, relevance for action is emphasised. It is further contended that diverse and complex forms of capabilities are needed to address equally complex issues.

Knowledge capability theory

The question of learning for an unknown future has been discussed from a phenomenographic perspective on learning (Marton, 1981; Svensson, 1997). This is a relational perspective

which describes qualitatively different conceptions (ways of experiencing) parts of the world from the learner's point of view. Knowledge is seen as *relational*, i.e. knowing is a relation between the knower and what is known, and learning is a change in that relation. The theory of knowledge capabilities (Bowden & Marton, 1998; Bowden 2004) has been developed from phenomenography. The theory focuses how to prepare learners to act in new situations, but such capabilities are at the same time acquired through interaction with current knowledge. Knowledge capabilities cannot be described based on what professionals would do in a given situation at the time of studies, or what would be considered as good practice at that time. Capability needs to be seen as more than the reproduction of a pre-defined set of behaviours. In their coming professional lives, learners will face a wide variety of complex situations with an unsure future, and whose particularities cannot be predicted. Appropriate action for each situation cannot be described in advance. Learners thus have to learn how to focus on critical aspects of professional situations (Bowden & Marton, 1998), understanding both how to discern and attend to the relevant aspects of a particular situation. Importantly, the kind of understanding that is practised in known situations needs to engage the learner in active and conscious reflection, employing a wide span of resources, so that the learner is better prepared to meet situations that are not known in advance. This constitutes

> /…/a far more holistic capability than those commonly defined in competency–based approaches. Moreover, such holistic capabilities represent the links between disciplinary knowledge and professional skills. They are the transformation of the eyes through which the professional world is seen. (Bowden & Marton 1998, p. 12)

Bowden (2004, p. 40) describes knowledge capability as the ability to:

1. work out what are the key aspects to be dealt with in each new situation
2. relate those aspects to the knowledge already acquired and/or to knowledge the graduate knows how to access;
3. determine what the underlying task or problem in that situation might be;
4. design a process or solution to deal with the situation; and then
5. have the ability to follow through and complete the task or solve the problem, either alone or with others.

Bowden's list of capabilities can be compared with Knowles (1975), who in his discussion of self-directed learning pointed to the ability to use knowledge for practical problem-solving in real life situations, and the ability to independently determine the problem in a situation as characteristic of the adult learner. In the analysis of data from the Lund Calling study, presented below, the aim was to make use of knowledge capability theory as an underlying framework.

The Lund Calling study

Findings from the investigation conducted in 2008-2009 in connection with the Lund Calling pilot project have previously been presented in a report (Nordén & Anderberg, 2010), and an article in *Utbildning & Demokrati* (Education and Democracy) (Nordén & Anderberg, 2011).

For further details concerning the design and scope of the study, we refer to these publications. Lund Calling made use of a course developed in the Young Masters Programme (YMP), organised by the International Institute of Industrial Environmental Economics (IIIEE) at Lund University (www.goymp.org/). The IIIEE is devoted to the study of preventive environmental strategies, and offers a masters programme, as well as doctoral studies and research in the field of sustainable development. The Young Masters Programme (YMP) is directed to students at secondary schools, and aims at introducing sustainability studies in schools around the world, where youth from different countries and cultures work with a common content in an interactive and problem-oriented manner. Learning takes place in an extended virtual classroom across the globe (10,000 students in 120 countries since the inception in 1999). The programme notably includes creating and implementing a local project for sustainability. Based on their experiences participating in the programme, thousands of young people across the world have since the commencement of the YMP taken concrete steps towards action, locally and globally. Although the programme specifically concerns preventive environmental strategies, like many forms of sustainability education, the YMP can be understood as teaching knowledge capabilities, preparing young people to act in an uncertain future. We shall argue that taking these steps from the known to the unknown, and widening their horizon of action from the local to the global, are core skills that young people need in their transition to adulthood today.

The Lund Calling project started with a pilot project initiated in the municipality of Lund in 2008, which aimed to offer secondary pupils the opportunity to study the YMP within the framework of their regular studies. The overall aim was to contribute to preparing pupils and teachers to act for sustainable development, in both local and global. In particular, the project had the ambition to connect local and global levels, showing our interdependence and training participants to reflect and reach viable conclusions transculturally. The pilot project covered pupils from year 8 at the compulsory level, to the end of upper secondary school, in six schools which had been selected by the municipality. The objective was to develop a model course, which could subsequently be used in all the schools of the municipality. A research project was conducted alongside the educational pilot project, aiming to investigate how pupils, teachers and head teachers experienced the project. This research providing a means to support the implementation processes. Qualitative interviews were conducted with pupils, teachers and head teachers, and a phenomenographic method was used for the analysis (Marton, 1981; Svensson, 1997). The aim of phenomenographic analysis looks for similarities and differences in the individual experiences and groups these into categories (Marton 1981). One part of the investigation focused experiences of critical capabilities of acting globally. The result of this investigation is reported in the study by Nordén & Anderberg (2011).

Findings of the Research

In the investigation, certain examples of knowledge capabilities were identified by participants as critical for Global Learning for Sustainable Development (GLSD). Changes

that were experienced by the participants as contributing to improved learning, and various forms of educational development, were distinguished from experiences of changes that did not lead to such development. These experiences were then related to knowledge capabilities that were included in the programme and considered necessary to support GLSD, but which were insufficiently developed in the programme.

Knowledge capabilities gained

Take command and collaborate in a team were critical knowledge capabilities experienced as developed during the course:

Take command. Pupils experienced that they had the competence to work more independently without the attendance of a teacher, and study on their own online. This is a form of critical knowledge capability that can also be interpreted as the responsibility taken by individual pupils, using a potential for competence building, through global learning activities relating to sustainable development. It seems that these pupils experienced the role of the teacher as a collaborating partner. By taking part in global activities during the YMP, the pupils developed their capacity to manage work independently.

Collaborate in a team. The critical knowledge capability, in this respect, was the ability to see that the complex content needed to be handled collaboratively. Experiencing this process resulted in the pupils themselves independently arranging for new alternative learning management strategies, with supported knowledge formation among themselves while networking. A characteristic of this critical knowledge capability consisted of the pupils' own initiative – once they had identified the need to organise cooperation themselves – to optimise their learning by making an agreement to plan and share work tasks between themselves. Through self–determination, each pupil in the small local team carried out tasks individually, and then sent it to the others to read and comment on.

Knowledge capabilities needed

Certain of the changes that were achieved during the implementation of the YMP were not perceived to generate forms of educational development *needed* to support Global Learning for Sustainable Development (GLSD). There were: be prepared, act in a transdisciplinary manner and lead others towards a holistic understanding.

Be prepared. Participating students, teachers and head teachers pointed out changes needed to lead to educational development, in the sense of a common global learning process. Though a global classroom had been designed for the pupils' studies, in practice, the YMP platform did not entirely meet participants' expectations of collaboration and interaction. Interaction between groups from different countries was also hampered by different starting dates and different paces in working with the tasks on the platform. It was felt that more satisfactory processes would have been achieved if participants had been better prepared, with a clear idea of what was expected of them concerning collaboration activities.

Act in a transdisciplinary manner. Some teachers had to depend on colleagues, who had complementary disciplinary competence in various subject matters. The ability to work in a transdisciplinary manner was thus identified as a critical capability.

Lead others towards a holistic understanding. The head teachers perceived the ability to be a pedagogical leader in the school as critical for educational development, to raise the crucial questions which would stimulate teachers to adopt a more holistic perspective in their teaching practice.

Transition skills

Considering the critical knowledge capabilities which the participants described, the following features appear to be particularly relevant as transition skills in global learning for sustainable development: transdisciplinary action; democratic collaborative action; self-directed learning and independent initiative.

Transdisciplinary action

Transdisciplinary approaches (Vikström, 2009) entail several benefits that go beyond the separate disciplines that may be involved. Such knowledge formation develops in actual practice, in collaboration with the actors involved, whatever sphere is investigated (Almers, 2009). Teaching subject matter of various disciplines with a transdisciplinary approach further develops a holistic perspective (Laurillard, 2002; Nordén, 2006) in knowledge formation for sustainable development, and thereby lays a foundation for a form of capability to act. Rather than considering isolated aspects of an issue, taking into account the larger picture, reflecting on causal relationships and how the various elements interrelate are all essential in finding adequate solutions.

Democratic collaborative action

Some aspects of two of the critical knowledge capabilities described can also to some extent be regarded as democratic skills (cf. Öhman, 2008), particularly *To take command* and *To collaborate in a team* (Nordén & Anderberg, 2011)**.** Understanding collaboratively is a form of learning that evolves in a *process perspective*. The process of organising teamwork, debating issues and reaching decisions creates the foundation for a capability to *act democratically*. In the course, such processes take place within the individual teams of pupils, at their local schools, and on the course platform, in discussions with other groups. They therefore additionally involve a dimension of transcultural dialogue and sharing concerns across national borders, building transcultural capabilities and widening the action horizon of the participants. Teacher teamwork and collaboration collectively within the YMP platform also allow attaining a kind of transdisciplinary capability in promoting global learning for sustainable development. Practising teamwork can further be seen as a prerequisite for the transdisciplinary capabilities mentioned above, since communicating and mobilising resources from diverse professions, disciplines or cultures all involve collaboration. This dimension of the course was stressed by all: dealing with tasks individually would not have

been possible. Collaboration and multi-voiced dialogue made the process meaningful. For example:

> It would not have been possible to manage this on one's own, so it is good that one can cooperate /.../ and discuss so that one can include several opinions. (Pupil)

> If you want influence, you have to talk with each other, you need a dialogue of course. (Pupil)

Teachers and head teachers expressed similar views:

> It is very much a question of getting functioning pupil influence , both on an informal and on a formal basis, so that /.../ both adults and pupils don't just learn about democracy and influence, but instead work with it all the time. (Head teacher)

> … to be able to cooperate as much as possible. Among teachers and teachers and pupils to attain. … more than just basic knowledge, some kind of competence for action for the future. (Head teacher)

If participants had seen the tasks as something they should manage individually, it would have constituted an unreasonable workload for the average student (Jungert, 2009). Approaching the tasks individually would have compromised participants' possibilities to reflect upon the learning activities and to learn in depth.

Self-directed learning and independent initiative

The pupils were largely expected to manage their studies independently in the frame of the course, working in small teams, in dialogue with other teams around the world. One head teacher described the course in the following terms.

> The YMP material is quite amazing and I also think the manner of working is good: you read and then you work, using your own local area as a point of departure, and then you have your room where you meet others, who have done the same tasks but in their own parts of the world /.../ the opportunities for our pupils are of course to create networks in other parts of the world and discuss issues that concern young people wherever you live in the world. [head teacher]

Although several pupils found this form of studies challenging, they also described how it forced them to organise themselves, and make decisions without instructions from a teacher.

Discussion

Limitation and potential in developing knowledge capabilities

The YMP provided a platform with material that the teams of pupils were expected to work with independently in the course, with very little guidance from their teachers. This was commented upon both in positive and negative terms. The positive effect was that pupils trained, organised and appraised their work themselves, gaining confidence and taking the initiative. At the same time, several pupils expressed frustration at the lack of teacher scaffolding and feedback. Teachers were impressed at how well the pupils were able to manage this situation.

> I am incredibly impressed by them /…/ that they still can /…/ comment on the contributions of others /…/ they felt it was extremely exciting /…/ the pupils I had were out chatting with the entire world. (Teacher)

The transition students' perception in adopting an adaptive or a cooperative approach, probably focuses more on developing generic skills such as problem-solving, planning and being able to master heavy workloads (Jungert, 2009). In line with Jungert, it can be assumed that how students' perceive their study conditions, and their opportunities to influence these, will interact with their motivation, self-efficacy, approaches to studying, and eventually the transition to work (Jungert, 2009). Moreover, the tasks included in the YMP offered scope to go well beyond simply working in teams with a predefined problem. The complexity of the issues allowed multiple approaches, and different ways of conceptualising causal relationships or what comprised underlying problems.. More importantly, working with a concrete project locally allowed the groups to decide themselves what their task would be (cf. Brookfield, 1993).

Pupils commented positively on the possibility for interaction with groups from other countries, but in practice this did not always work as well as anticipated. Differences in language, but also different paces of work hampered communication. Additionally, teachers felt that with insufficient input from them, there was a risk that pupils simply discussed issues they already knew well and felt comfortable with, rather than probing deeper into unfamiliar questions or expanding their knowledge. One teacher expressed that only certain students were capable of taking this initiative.

> You see pupils who will be able to manage this, and maybe sort of want to get more challenges than the others have. Those are the ones I think should devote themselves to this. (Teacher)

There is thus the risk that weaker students are particularly disadvantaged by lack of teacher scaffolding. Peirce (1934) and Bateson (1972) stress the relationship between theory and practice, combining holism, relationship and perception (Hansson 2000). *Abduction* was for (Peirce 1934) important in develop understanding of complexities, and the concept could be used as the logical basis for relational thinking, and for a holistic way of reasoning. Through an abductive activity, the awareness of the complexity of the world around us is maintained, and the opportunity for deeper understanding might increase. Knowledge is to be judged for its purpose in relation to action, according to Peirce. Through a process of verification, what is believable and what is to be rejected can be decided, while avoiding over–simplification and maintaining complexity. Various investigations of pupils' reasoning in the YMP have shown that the pupils very often lack the ability to be inductive, or to test an idea through deduction. This could be remedied by introducing pupils to more qualified ways of reasoning in collaborative settings (Bateson, 1972; Hansson, 2000, 2004; Hansson & Nordén 2005; Sund & Wickman, 2008).

As well as more stringent reasoning skills, developing the capability for in-depth self-directed learning, and learning how to identify one's own 'blind spots' – areas that are left unconsidered since they are ignored in the first place – seems to be a central educational challenge. Self-directed learning assigns a crucial role to the learner in selecting and

assessing learning materials (Loyens, Magda & Rikers, 2008). The term self-regulated learning has also been used to cover the diverse processes of goal-setting, metacognition and self-assessment, and the concept is related to the field of problem-based learning The learner learns in the course of solving problems, by being in charge of planning, monitoring and evaluating, and comes to develop his or her own strategies to deal with these various aspects (Loyens, Magda & Rikers, 2008). An additional step in the direction of self-directedness is not only working on pre-defined problems, within a given frame, but individually and collaboratively contributing to formulating what the problems are and which perspectives to apply. Negotiating the tasks at hand in turn relates to skills involved in democratic processes.

Self-directed learning (Brookfield, 2009) does not necessarily mean highly individualised learning, carried out in isolation. As the Lund Calling project shows, it can also work in group-learning settings. According to Brookfield (2009), research suggests that often self-directed learners consult diverse peers by moving in and out of learning networks. The learner takes command and decides whether to contact external resources, or maybe choose to be under the control of an expert, depending on the learner's appraisal of the situation. Brookfield (2009, p. 2615), referring to Knowles (1975), argues that 'adult learners universally are under the character of being judged to demonstrate an increasing predisposition to self-directedness, as they cross the threshold of adulthood'.

A tension can thus be observed between self-direction and the teachers' perspective that scaffolding or more stringent reasoning are needed. A second line of tension was seen in the interviews, between the pupils' personal engagement and wish to work with issues that they felt were highly meaningful within the YMP, and the necessity to focus on subjects that gave them better marks on their regular courses. It can therefore be discussed to what extent existing structures were adapted to the type of learning involved in the YMP. Teachers expressed the concern that they had a restricted scope of action, due to the mandatory character of the subject matter and the boundaries between disciplines defined by syllabuses and the national curriculum.

> There are loads of teachers and pupils who are aware of the importance of sustainable development and have understanding. That's not the problem. The problem is: how do we work together concerning these issues within the frame of the school? And I can feel that at this school, people do not have a clear idea how to go about that, the question has not been critically examined. [head teacher]

The main results from the Lund Calling pilot project thus suggest that the implementation of the course supported the development of collaborative capabilities as well as allowing many pupils to develop initiative and self-direction. These can be seen as important capabilities on the path to autonomous action and adulthood. However, other pupils needed additional teacher scaffolding, better preparation, and a more interactive platform. Teachers expressed the concern that with insufficient teacher intervention and poorly developed reasoning skills, knowledge formation remained shallow. Although the profoundly transdisciplinary nature of required action was perceived, existing structures were not seen as conducive to this type of learning. Despite such limitations, through the programme, pupils and teachers developed their capability for networking and communicating with pupils and teachers in other countries

(Nordén & Anderberg, 2011), an important condition for action in an increasingly globalised society. Thus, it serves as a course in transition skills that moves the learner from existing to new and unknown learning and doing. The course widens participants' horizons of action, by forming an extended global learning space, in which a common content takes on first a local meaning, and then gradually becomes more global (Hansson & Nordén 2007). To understand the issues involved, the wide local knowledge emanating from the students' diverse backgrounds combines with the global common content of the course. A transition is powered through the synergy of the course materials, the transcultural discussions and the students' own life-experiences, together constituting a rich and dynamic context for learning. The students in the YMP consider that by using the tools offered and constructed through the course, they became more aware of sustainability, and they have improved their skills of analysis (Hansson & Nordén 2007).

Conclusions

In this article, we have explored the acquisition of transition skills for action, which young people need to become responsible and capable adults in a rapidly changing and uncertain world. In educational contexts, this involves, among other aspects, maturing from forms of learning that rely heavily on teacher scaffolding, and progressing to more self-directed and independent learning modes. However, while individual initiative in appraising various phases of the learning process is important, central qualities are also teamwork and transcultural communication. Sustainability education plays an important role in this respect, supporting democratic collaborative action, self-directed learning and independent initiative.

This can be contrasted with a notion of adulthood that amounts to simply acquiring the financial autonomy needed to create an individual lifestyle, consuming products and services offered on the market (Röpke, 1999).

As Hitzler & Honer, (1994) point out, in a changing world, there are no ready-made recipes for success.

> People's daily life-world is fragmented in a multitude of decision-making situations, for which (not despite, but as a consequence of the wide range of available offers) there are no longer any reliable 'recipes'. For each individual there arises a claim but also an obligation to an (more or less) 'own' life. (Hitzler & Honer, 1994, p. 308, our translation)

This is not only the case at an individual level, but also for society as a whole. Existing social institutions are not adapted to the challenges of the world today, and will necessarily tend to lag behind. To respond more effectively, Beck and Beck-Gernsheim (2002) have proposed the internet as a forum for self-active culture, where new forms of alliances and communities can emerge. Young people today cannot, as in earlier periods of history, base their actions entirely on the traditions of the family or community they were born into, nor can they simply rely on institutions (cf. Giddens, 1990). Instead, they need to learn to form their own communities, capable of reflecting and deliberating, organising for concerted and appropriate action, locally and globally. But the passage to adulthood also requires recognition and

respect. Young people need to feel that they are heard, when they contribute to society (Östman, 2003; Nordén & Anderberg, 2010).

Here, school can play an important role, empowering students by helping them develop necessary knowledge capabilities, but also by providing fora for expression and deliberation. Since changing conditions impact on any efforts towards sustainability, democratic skills can be considered as a form of action competence for sustainable development. This includes actions both on an individual and an institutional level, as well as shared responsibilities: promoting concrete global action, and promoting sustainability learning in a global context (Anderberg, Nordén & Hansson, 2009).

Studying how people manage to deal with the stress of traumatic events, Antonovsky (1987) identified what he called 'sense of coherence'. This comprised comprehensibility, manageability, and meaningfulness. In educational terms, this can be related to knowledge, allowing us to understand the world around us, capabilities to act in constructive ways, and values that give meaning to our existence. Students on the YMP have emphasized the urgency of transcending existing obstacles to action. They express the belief that online learning should not be a copy of school teaching - it has to be developed on its own way. Reaching sustainability, according to the students, demands a 'new philosophy' and 'helping new thinking' (Hansson & Nordén 2007). If transition entails the need to cope with new challenges, empowerment to take action gives young people the means to deal with the stress of change, in their own lives as well as in society.

Increased awareness of worldwide events, a flood of information that is not always easy to structure, multicultural society, and social connections through the internet, are all important aspects of growing up today. Knowledge formation takes place in a variety of settings, outside the traditional classroom (Booth et al, 2007). Concerning sustainability issues, learners therefore need to 'learn how to learn', in both global and local settings. According to Hansson (2000), knowledge should not be seen as a possession, which can be additively accumulated, and she instead proposes the 'knowledge to act'.

Focusing on the knowledge capabilities that underpin young people's ability to take action allows us to move beyond some of the limitations of current conceptualisations of transition. This also has implications for education. In most discussions, young people's passage to adulthood primarily focuses on identity. Various studies present a picture of growing up that includes both changes in the direction of individualisation and disembeddedness (Bäckman, 2009), as well as continued structural inequalities (Danielsson, 2010). Hizler and Honer (1994) and others have observed that when individuals are disembedded from their backgrounds, reality tends to become fragmented and lack coherence. Young people have difficulties finding viable channels for concerted social action. Instead they invest their energy searching for identities that can provide a sense of belonging and acceptance, making them easy victims of consumerism (Röpke, 1999). Inversely, passively reproducing traditional values of family, class or community, leads to the reproduction of social inequalities. But whether the individual is seen as disembedded, or as coming from a particular background, the educational response is mainly attempting to provide equal opportunities for all, which

generally amounts to adapting to the labour market as it stands today. Ultimately, this favours uncritical flexibility, and training young people in generic skills which match the expectations of potential employers. Learner attitudes tend to be reactive, rather than pro-active.

In the present article, instead of examining the collective or individual dimensions of transition, a view has been proposed that focuses on empowering young people to act. Sustainability education is about learning to understand the complex forces which shape our world, and finding ways to cooperate across national boundaries for a better future. Working consciously for knowledge capabilities (Bowden, 2004), using a transdisciplinary and transcultural cultural approach (Hansson & Nordén 2007), means that any type of identity and experience can be used as a resource. Diversity is seen as an asset, since it widens the range of perspectives that can be considered. Values are discussed and reflected on, rather than being taken for granted. In such learning and teaching contexts, sharing the same identity or culture is no longer a condition for collaboration. Finally, knowledge, skills and attitudes cannot be considered separately: a holistic view of education is required (Hansson, 2000), including reflection on values and responsibility for the society in which we live (Öhman, 2008).

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