

COMMUNICATION AND LEARNING IN SLOYD PRACTICES

Research programme funded by the Swedish Research Council, Committee for Educational Science

Lars Lindström, Kajsa Borg, Marlène Johansson and Viveca Lindberg

The Swedish term *slöjd* comprises activities connected with the craft production of useful and decorative objects. It can also refer to craft and design as a school subject, in the sense that has been borrowed into English as “sloyd”, which is a compulsory subject in Swedish comprehensive school, embracing the formerly separate subjects of textile craft, woodwork, and metalwork. In voluntary education, after comprehensive school, the content of the subject can be found in various upper secondary school programmes and special schools. There is a gender problem inherent in the subject, since it has traditionally mostly been women who have done craft work with textiles and men who have worked with wood and metal. Sloyd teachers are now trained, together with other teachers, at our universities and the Stockholm Institute of Education. All education at this level must have a scientific basis. It is therefore remarkable that sloyd, which has been taught at tertiary level since 1977, still has not been given any permanent research resources at any university in Sweden. Sloyd teacher training programmes seriously need to be able to relate the development of the subject to research focusing on the teaching of sloyd. The sloyd-related research findings that do exist are the result of the scattered efforts of individual researchers; efforts have never been coordinated. No theoretical or methodological schools of thought have ever arisen. The lack of established sloyd research environments also means that existing research remains relatively unknown, at least outside sloyd circles.

Earlier research on school sloyd can be roughly divided into four different trends: historical, pedagogical/didactic, technical/scientific, and work on artistic development (Borg, 2001). The legitimacy of sloyd as a subject has a historical foundation. The years between 1880 and 1920 which were so significant for sloyd have generated a number of texts (Johansson 1987; Thorbjörnsson 1990; Trotzig, 1992, 1997). A similar emphasis in historical research can be found in the other Nordic countries (Kantola *et al.*, 1999; Kjosavik 1998; Kragelund, 1989). Pedagogical and didactic research has concentrated on curricular studies, surveys of the history of ideas about sloyd, studies of official inquiries, and – occasionally – studies in the classroom (Hartman, 1984; Sjögren 1991; Hartman, Thorbjörnsson & Trotzig, 1995; Malmberg 1995; Borg, 1995, 2001; Johansson, 1994, 1999, 2002).

The very first major project was “School and Sloyd” 1976–80 (Eriksson *et al.* 1980) at Linköping University. The national assessment of sloyd (NU92) was carried out at the Department of Home Economics at Göteborg University, resulting in three reports (Skolverket, 1993, 1994; Johansson, 1994). When it comes to the voluntary school forms too, historical research has dominated. Studies have concerned the development of vocational training in general at the national level (e.g., Hedman, 2001; Lindell, 1992; Nilsson, 1981) and at regional and local level (e.g., Carlén 1991; Edgren 1987; Greijer, 1988; Larsson, 1991; Spångberg 1987). Larsson (2001), however, devotes particular attention to industrial and craft training in Sweden. Andersson Gustavsson (2002) likewise writes about the history of craft training, although her main interest is in the training of hairdressers. There have been few classroom studies on vocational training (Berner, 1989; Frykholm & Nitzler, 1989; Lindberg 2003; Linde, 1988a-b) and those that exist do not touch on the field of crafts.

Jernström's (2000) study of apprentice training of hatters is the one that comes closest to dealing with communication and learning in sloyd-related education. The study describes and interprets how craft knowledge is passed on from master to apprentice. Apprentice training, however, is subject to different conditions from those prevailing in upper secondary school. To our knowledge, there is no research on Swedish post-upper secondary school craft training with a focus on sloyd. This is a serious deficit in view of the great success achieved by several of these training programmes (e.g., Beckman's School as a nursery for trend-setting clothes designers), and in view of the need for apprentice training to make visible the progression from elementary levels of competence to acknowledged skill in the making of useful or decorative objects of textile, wood, or metal.

To become familiar with the outlook on learning that characterizes sloyd teaching, it is necessary to study teachers' traditions, attitudes and ideas concerning their mission. Earlier research has shown that the attitude of teachers to the content of sloyd tuition can be understood in terms of their own life story (Berge, 1992; Helgadóttir, 1997) or on the basis of influences in their teacher training (Nygren-Landgårds, 2000). Halvorsen (2000) draws attention to the encounter between the personal cultural heritage that Norwegian sloyd teachers have, on the one hand, and the culture within which they are put to work, on the other hand. As examples of other relevant studies of teachers' perceptions and teaching styles, we may mention Hartman (1995), Magnusson (1998), Elsner (1999), and Ritchhart (2002).

To sum up, it may be said that earlier sloyd research has concentrated in large measure on the historical development of the subject. Researchers have been particularly fascinated with Otto Salomon, whose pioneering efforts at Nääs placed sloyd on the world educational map. Salomon gave the subject a content and a form which were to set their stamp on the discussion of the teaching of the subject for more than a century. Both supporters and renewers of the Nääs method and sloyd have taken their point of departure in the pedagogical heritage left by Salomon. Female pioneers, such as Hulda Lundin, have also been the subject of studies.

Our research project shifts the attention away from the past to the significance of sloyd skills in the present and the future. Among other things, we want to investigate what and how pupils do and learn in sloyd classes in comprehensive school. Questions of this kind require the development of empirically founded theory and an adaptation of the methods developed in classroom research, that is, in conjunction with field studies of the way in which pupils and teachers think, feel, act, and interact in school. Such research is highly demanding, if one wants to describe and understand something of the complexity that characterizes all tuition. It is therefore weakly represented in school research in general and occurs only exceptionally in research on sloyd and other practical-artistic subjects, where communication takes place not just through language and conversation but also through instrumentally mediated activities and non-verbal interaction (body language, gestures, mime, etc.).

Areas where the knowledge base in the form of empirical studies is fragile give scope for statements based on belief and anecdotal evidence. Jan Thavenius (2002) has recently presented a survey of primarily Swedish knowledge about aesthetic subjects and "culture in school". He concludes with the following reflections:

It is my opinion that the field is characterized by vigorous production of beliefs and hopes. Reference is more often made to what is believed and hoped than to knowledge which is theoretically or empirically based. There is nothing wrong with beliefs and hopes. They are needed so that we can have the energy to become involved. But we must also be prepared to confront our belief and our hope with the critical scrutiny represented by, among other things, research. We must also be open to the alternatives and hidden opportunities which, if all goes well, research can

point out to us. It therefore obstructs the development of the field that both theoretical and empirical research is in short supply. Another obstacle is that the research that does exist finds it hard to reach out and be put into practice. (pp. 66 f.)

We agree in this description of the current situation (see also Lindström, 2002a) and can observe that it applies to sloyd as well. On the international arena, Elliot Eisner has contributed over many years to giving the aesthetic dimension a central place in our understanding of teaching and human thought. In his latest book, *The Arts and the Creation of Mind*, Eisner (2002) sums up and develops his view of the significance of practical-artistic subjects and also discusses which research questions are most urgent. He writes:

Among the most important kinds of research needed in the field are studies of teaching and learning [...] studies that try carefully to answer the question “What do teachers of the arts do when they teach and what are its consequences?” [...] What kind of curriculum activities do teachers ask students to engage in? [...] What kinds of comments do they make to their students as they view their work? [...] What proportion of the teacher’s discourse focuses on aesthetic matters, what proportion on technical matters, and what proportion on matters of classroom management? [...] How much access do students have to one another? [...] Questions such as these are important, for if we know little about the processes teachers employ in classrooms, we will be in a poor position to improve teaching. (pp. 215 f.)

Eisner calls for empirically based examples of aesthetic learning processes and the conditions in which they take place. Such contextualizing process studies, in his opinion, help teachers to design tasks and offer tuition which furthers the aesthetic awareness of students.

The aim and delimitation of the project

The following sloyd project has been developed in collaboration between departments at the Stockholm Institute of Education (Lars Lindström, Viveca Lindberg) and the universities of Göteborg (Marléne Johansson) and Umeå (Kajsa Borg). The project involves three researchers who have recently taken their doctorates and two doctoral students. If funding is granted, the project will offer an environment for sloyd research which Sweden has hitherto lacked. This means that a theoretical platform can be developed with the aid of empirical studies where the different geographical location of the three universities can continue to contribute to a rich influx of ideas. Moreover, the project may stimulate the interest of other teacher trainers in subject-linked research, particularly through the parts of the project which are based on classroom observations. The work on the application has been done with the aid of a planning grant from the Swedish Research Council’s Committee for Educational Science.

The *aim* of the project is *to contribute to increased understanding of teaching and learning in sloyd*. In the title we have given the project, however, we have chosen to speak of *communication* instead of “teaching”. With this terminology we wish to stress that we are interested in all the conditions that affect interaction and learning in sloyd classrooms. These include not just the methods teachers use to further learning but also other circumstances which affect the students’ communication with and influence on each other. An important viewpoint, which is often ignored in educational research, concerns the way in which the

classroom's learning environment is organized and the social norms and routines that are likely to stimulate and maintain motivation and learning.

In the study of sloyd teaching it is in addition, more than otherwise, essential to pay attention not only to the social but also the physical environment in which learning takes place. This includes such things as the interior design of the sloyd classroom, the accessibility and selection of tools, materials, etc. The ability to judge the stage that pupils have reached in the development of their knowledge, for example, is complicated by the fact that a person who is an expert in the field not only possesses greater skills; these skills moreover have a different structure, because experts usually have other and more sophisticated cultural tools at their disposal than novices have. In other words, competence is *mediated* (Wertsch, 1998; Lindberg, 2003), among other things by the material and symbolic tools which the pupil masters, the materials which the pupil is offered to work with, and access to meaning-bearing sloyd objects.

By the term *sloyd practices* we wish to stress that school sloyd can be regarded as a practice in a socio-cultural sense (Säljö, 2000; Johansson, 2002). The social and physical learning culture is perceived, from this point of view, not as external factors influencing the individual's understanding and actions. The individual's understanding and actions are always part of a context, which they help to create and recreate. Learning is situated in social practices. This outlook pays attention not just to the knowledge and skills that pupils acquire in sloyd but also what the pupils learn by learning something in sloyd. This "metacognitive knowledge" (a term borrowed from cognitive psychology) is a result of experiences and awareness of the situations and social practices in which the knowledge is useful. The latter form of knowledge corresponds in part to what is called "familiarity" in Swedish curricular work. With terms borrowed from Aristotle, one can say that the study of sloyd practices must be done in a broader perspective than *techne* (craft skill); it must also concern *phronesis* (practical reason), that is, the ability to determine when a particular skill is relevant and purposeful. Understanding of the school subject of sloyd as social practice facilitates comparisons with sloyd-related practices outside school (for an up-to-date survey of the "learning culture" of sloyd see Lindström, 2001).

The concept of practice shifts attention away from the "matter" (facts, concepts) that the pupil has to "assimilate and grasp", towards more general *learning qualities* (critical thinking, creativity, communicative ability, etc.) which the pupil acquires by handling intellectual and other tools in various activities, each with its own learning culture (learning environment). It was a conscious ambition of the school reforms of the 1990s to tone down the subject content as a defined body of knowledge which had to be learned, instead highlight the qualities that are to be developed (Skolverket, 2001). In the Anglo-Saxon debate about knowledge, a distinction is made between *disciplines* and *subjects*. The former term includes the methods for creating knowledge and the ways of thinking, feeling, and acting that characterize individuals with expert knowledge in a field. Transferring this to sloyd, one can call the content of the work that a craftsperson engages in *the discipline of craft and design*; with this perspective it is interesting to examine how school can further the learning qualities that are cultivated and valued in this discipline, in full awareness that the aim is not "to use school as a means to educate craft workers" but "to use school as a means to educate human beings" (Salomon, 1882).

To sum up, by speaking of *communication* we want to emphasize the importance of the whole context in which interaction, teaching, and learning take place. Competence in the field of sloyd is perceived as *mediated*, that is, dependent on the cultural tools at the pupil's disposal. The term *sloyd practices* is an expression of our aspiration to extend the perspective on learning from referring solely to knowledge itself to include also familiarity with the context

in which knowledge and skills are formed and applied. We are thus interested not just in the materials and techniques that the pupils learn in sloyd but also the more general *learning qualities* (general competences) that pupils are given the opportunity to develop. This is important not least in view of the vocational teachers' need to be able to formulate their assignment in an upper secondary school with responsibility for both the general and the specific development of knowledge.

Research questions and investigation methods

Below we describe our research questions and the ways in which they can be tackled. It should be noted that this is a project outline which will undergo repeated revision in the course of the work. The main intention is to convey an idea of the orientation, scope, and feasibility of the study. Beside each heading there is a statement of the researchers who, with the support and supervision of Lars Lindström, have the main responsibility for the implementation of that part of the study. The doctoral students will be distributed among the parts of the study with consideration both for their own research interests and for the project's need for resource reinforcement. In the different studies we shall attach special importance to whether or to what extent gender-related results are obtained.

Study 1: Sloyd in a changing world (Viveca Lindberg, Kajsa Borg)

Research question: What kind of sloyd- and craft-related competence is in demand in society?

Perspective: Making a distinction between the learning culture of school and that of the practising craft involves both opportunities and risks. The opportunities include the fact that there has been a gradual increase in the scope for independent creativity, experimentation, and risk-taking (Säljö, 2000). These are valuable abilities in a society that is constantly changing. The same applies to the ability to plan, carry out, and assess a self-chosen task. One of the risks is that the school's learning culture can distance itself too far from social practices and learning cultures outside school. The tuition can then be perceived as irrelevant, antiquated, and divorced from reality. We risk having special "school crafts" that claim to educate people even though there is no clear link with the more highly developed craft cultures that exist outside school. The relationship between the learning culture of school and learning cultures in society is sometimes perceived as a conflict between personal development and social utility. This is one of the dilemmas that a study of sloyd can illuminate. Questions about changed competence requirements in "practical" vocational work as a consequence of new cultural tools being brought into use have previously been studied by one of the participants in the project (Lindberg, 2003).

Methods: Case studies of sloyd-related practices at post-upper secondary school level, such as Beckman's School, Carl Malmsten's School, the school run by the Friends of Textile Art (Handarbetets Vänner), and the University College of Arts, Craft and Design (Konstfack); analysis of the changed role of sloyd practices in the everyday life of children and young people (domestic handicrafts and the courses given by adult educational associations, the new design wave), the modernization of apprentice training (The EU Handicraft Project, the Craft

Academy), trends in sloyd in upper secondary school education (the handicraft programme, the arts programme, Nyckelvik School).

Study 2: The learning qualities of sloyd (Kajsa Borg, Marlène Johansson)

Research question: What learning qualities and other values do teachers, principals, and pupils think are furthered by good sloyd teaching?

Perspective: The aim and content of sloyd have hitherto been expressed in official Swedish texts in an almost stereotyped way, without any prior problematization or investigation. John Harland and his co-workers (1998) at the National Foundation for Educational Research (NFER) in England conducted in-depth interviews with teachers and principals at five English secondary schools known for their success in teaching aesthetic subjects. On the basis of these interviews they constructed a set of categories (a taxonomy) describing the effects that the interviewees thought they could see in different areas. This procedure resulted in a comprehensive list, from which we select here the effects that it was thought that teaching in different practical-artistic subjects could achieve: (1) knowledge, understanding, and appreciation of aesthetic activities; (2) knowledge about the cultural heritage, cultural differences, and the social and cultural issues expressed in aesthetic activities; (3) basic or advanced skills in the respective activity; (4) the ability to communicate, express, and interpret thoughts and emotions; (5) the ability to think, solve problems, and create something of one's own; (6) self-confidence and personality development; (7) the ability to understand and empathize with other people's viewpoints and circumstances; (8) the ability to cooperate and other social skills; (9) people who feel better, are happier, and get more out of life than work and consumption (10) transfer effects in the form of increased motivation, creativity, etc. which have a contagious effect on other situations.

The final report from the project emphasizes the pupil's perspective. Here Harland and co-workers (2000) demonstrate significant differences in expected results which can be explained in terms of the distinctive features of the practical-artistic subjects and by the teaching method applied in the respective subjects. Differences of this kind can presumably also be found in sloyd, where opinions differ as to how the craft object, the craft process, and other elements are to be evaluated.

Views of the importance of sloyd as a subject have been investigated, for instance, as part of the project on experimental sloyd at the University of Linköping (Eriksson et al., 1980), by Finnish studiers (e.g. Christina Nygren-Landgårds, 2000), and by current Swedish counterparts, including that conducted by Kajsa Borg (2001), who is participating in the present project. International studies have broadened the perspective as regards the learning qualities that aesthetic learning processes can achieve, to include also various multidisciplinary competences (Harland et al., 2000; Eisner, 2002).

Methods: The target group for our study is sloyd teachers, principals, pupils, etc. We plan to test the new perspectives in a questionnaire supplemented with interviews with teachers and pupils in some schools which are considered successful in the field of sloyd.

Study 3: Conditions for learning in sloyd practices (Marlène Johansson, Viveca Lindberg)

Research question: What is the interaction between teacher's views of sloyd activities, the learning qualities that teachers value and aspire to in their sloyd teaching, and the learning environments that they offer to further such qualities?

Perspective: In a recently published study, Ron Ritchhart (2002, n.d.) of Harvard Project Zero shows that teachers' notions about what it means to think have a crucial influence not just on their way of planning their teaching but also on the extent to which they actually succeed in getting the pupils to think and reflect. Courses in the art of thinking, or literature on the subject which the teachers have read, seemed to be of lesser significance. Ritchhart's study sends an important signal to today's teacher training by emphasizing the importance of tackling, challenging, and testing the students' basic ideas about what it means to learn and teach.

Ritchhart's (op. cit.) research is part of a cognitivist tradition. Looking at things from the theory of activity, it may be said that different teachers have different objectives for their teaching. They perceive their task differently depending on the learning tradition which they espouse (Engeström, 1993). According to the latter outlook, the same activity takes on different meanings if it is structured within different overall activities. Making a bootjack, for example, has a different meaning if it is done according to Salomon's model, as an exercise in different craft techniques such as sawing, planing, filing, etc., than if the same activity is part of a sloyd process where "the result is not the important thing" and the emphasis is instead on the sensual experience and the personal creativity. Whatever the theoretical perspective, it is important in a study of the kind we propose not just to look at what happens in the sloyd classroom but also to "take a step backwards" to reflect on the ideas and traditions that teachers and pupils bring along and which give activities meaning.

It is essential to give a theoretically relevant and rich picture of the learning environment that sloyd offers. This requires an awareness of the kind of learning qualities that sloyd teaching can and should achieve, that is, answers to questions of the kind raised in studies 1 and 2. What is needed over and above that is empirically based examples or case studies showing how these qualities are developed or counteracted in specific circumstances which have to do with teachers' learning traditions, the tasks that pupils are given to solve, the norms and values of the learning culture, and the signals that teachers give about what is required to succeed, about when a piece is finished, and so on. Qualitative studies of this kind can help teachers, teacher trainers, and others to formulate appropriate tasks and to plan teaching in such a way that it leads towards learning qualities which are considered particularly important.

We shall use the experience acquired in earlier sloyd research, for instance by Marlène Johansson (1999, 2002), who is taking part in this project, as well as studies in Harvard Project Zero of how different learning cultures promote or counteract general competencies (Ritchhart 2002, n.d.). In addition, the main applicant, as participant in a working group at the J. Paul Getty Trust in the USA, has had the opportunity to conduct a detailed scrutiny of a classroom study of art teaching which is intended to run concurrently with the one we are planning, and which will be implemented by a group of leading researchers at the Harvard Graduate School of Education. The scholarly leader of the project will be visiting Stockholm in August. A joint seminar is planned which – if the project comes about – will be the start of continued scholarly exchange, as we approach similar social practices from different theoretical points of departure (cognitivist, socio-cultural, activity theory, etc.).

Methods: This third study will be the most research-intensive and resource-demanding part of the project. One might wish for a simple and cheap method to understand what happens in

school but, to use Eisner's words (2002, p. 217): "There is no way to know without looking." Nor is it enough to look at what happens on the surface; the researcher must acquire the ability to see what is happening in what appears to happen, that is, to interpret the meaning of what is seen. This further presupposes that the researcher is aware of his or her own perspective, its strengths and limitations.

Teachers' learning traditions, aims, and ideas about how they might be achieved can be surveyed by means of qualitative interviews, Q Sort, Repertory Grids, Stimulated Recall, Critical Incidents, and similar methods. A preliminary study of this kind has been conducted by the main applicant, Lars Lindström (2001). Learning environments can be studied through, e.g., field notes, video recordings, assignment analysis, pupils' and teachers' diary notes, analysis of classroom language, tool-mediated activities and assignments. In her study of sloyd practices, Johansson (1999, 2002) derived inspiration from ethnographic methods and analyses (e.g. Agar, 1980; Atkinson & Heritage, 1996; Erickson, 1992; Have & Psathas, 1995; Silverman, 1995, 1997).

We plan to find teachers who can serve as "good examples", that is, those who can be assumed to have good prospects of furthering learning qualities of the kind ascribed to sloyd teaching. For the sake of comparison, teachers should represent different learning traditions (e.g. with the emphasis on either the craft or the process) and different types of sloyd. Their teaching will be studied in the form of spot observations during a term. Interaction in the classroom will be analysed against the background of the individual teacher's outlook on the subject and criteria which describe and evaluate the learning environment from creative, intellectual, and communicative angles.

If it proves possible, it would be valuable also to get pupils to complete a form about their experiences after each observed lesson (Csikszentmihalyi & Larson, 1987), by analogy with a method tested in other school research, under the leadership of the main applicant (Lindström, Arnegård & Ulriksson, 2003). The information thus obtained can be enriched with interviews with pupils showing particularly high or low motivation.

Study 4: Sloyd practices – a theoretical model (Lars Lindström and co-workers)

Research question: How can communication and learning in sloyd practices be described and understood in a theoretical perspective, with elements borrowed from, e.g., motivation and creativity studies, epistemology, and socio-cultural theory?

Perspective: Creating things from different materials is often perceived as pleasurable. It gives an opportunity to give form to one's own ideas. It cannot be taken for granted, however, that the actual sloyd process develops the pupils' creative ability – or even makes them feel motivated. For example, materials and techniques can cause such great difficulties for pupils that their ideas are not expressed. The state of "flow" that can arise when challenges and skills correspond (Csikszentmihalyi, 1975; Csikszentmihalyi & Csikszentmihalyi, 1988) never occurs.

An extensive empirical study by Lindström, Ulriksson, and Elsner (1999) showed that art teachers often overestimated pupils' creativity. A rich artistic idiom did not always have its counterpart in a creative attitude in the form of (1) investigative work (being persistent, not giving up in the face of difficulties); (2) inventiveness (posing problems, testing new solutions); (3) the ability to emulate models (actively searching out and using models); (4) the

capacity for self-assessment (describing and reflecting on different qualities in the work). There were, however, classes where a good result was also matched by a creative approach. The study generated a number of hypotheses about what characterizes such learning environments (Lindström, 2002b): the pupils are given assignments which are generative and extend over a lengthy period; teaching puts the emphasis on both process and product in order to encourage active exploration; teaching is carried on in such a way that the pupils associate production with perception and reflection; the pupils are given ample opportunity to evaluate their own work and obtain responses from classmates and teachers.

Creativity studies of this kind can serve as a point of departure for analysis of the teaching process. It raises questions of the following kind: (1) Does school create situations in which pupils can carry out investigative work in depth? Does the teaching deal with different strategies in investigative work? (2) How does the learning culture establish the security that is needed so that pupils will dare to take risks? How do teachers develop pupils' inclination to problematize the tasks they are working with? (3) What access do pupils have to craft objects which demonstrate different ways of solving a task? How do pupils get help to link their own sloyd practice to sloyd-related practices in society? (4) How do teachers ensure that pupils get a response to their works from other pupils? If this happens, how does the teacher contribute to making the viewpoints informative and helpful?

Methods: The study will develop a theoretical frame of reference to describe and understand learning in sloyd. Concepts derived from earlier research will be tested in the project. The outcome of the empirical studies will in turn be used to modify the theoretical frame of reference, which includes elements borrowed from motivation and creativity studies, epistemology, and socio-cultural theory. Let us conclude by quoting Thavenius (2002), who points out:

Practice is not just a place where the usefulness of theories is tested. It is above all a place where the theories are developed to become useful tools in pedagogical work. This also means that theoretically illuminated descriptions of pedagogical practice – one's own or others' – are an invaluable basis for more qualified education. (p. 61)

Gender aspects

As we hinted above, woodwork and metalwork in school were long reserved for boys, while girls had to learn textile crafts. According to Berge (1992), this division still applies to a large extent in the training of sloyd teachers. This has changed at the level of steering documents. Since there are only occasional classroom studies, however, we know very little about what boys and girls are given the opportunity to learn in sloyd lessons in comprehensive school. A Finnish study (Autio & Hansen, 2002) found statistically certain differences between what boys and girls learned. The researchers constructed a test to measure the effects of sloyd teaching in school. On the other hand, they did not study what boys and girls actually did in sloyd classes. The National Agency for Education (Skolverket, 1999), in its assessment of the upper secondary school craft programme, found that 85 per cent of the pupils were female. As regards upper secondary school, there likewise a lack of research about what female and male students learn or are given the opportunity to learn in sloyd and craft. In the different studies in this project we intend to elucidate gender issues in relation to pupils' learning in different

educational contexts. We are also interested in which learning situations male and female teachers create.

Ethical aspects

The studies in this project involve interviews with pupils and school staff. These people will be informed about the project – its aims, methods, and forms of publication. They are informed that participation is voluntary. Information will also be given to the parents of pupils who are minors before the start of data collection. Telephone numbers of project personnel will be issued so that those who wish to discuss the project can do so with the people in charge of it. As regards observations with the focus on processes and personal interaction, these require the consent of all those present. If anyone should not accept the presence of the observer, no observations will be made. Teachers and pupils will be informed that the information accumulated will be used solely for research purposes and handled only by project personnel. The information will be processed, stored, and presented in a way that ensures the confidentiality of the participants.

Preliminary working plan

Year 1 (2004): start of project

doctoral students are employed and the division of labour is established
visit to NFER (England)
data collection begins
working meetings of the entire project group, with/without expert participation

Year 2 (2005): data collection, processing, and analysis

data collection completed
preliminary analyses
working meetings with the entire project group, with/without expert participation
participation in scholarly conferences (information about the project)

Year 3 (2006): continued processing, analysis and interpretation – preliminary results

continued analysis and interpretation
working meetings with the entire project group, with/without expert participation
participation in scholarly conferences (information about the project)
the first scholarly articles will be published

Year 4 (2007): reporting in and for different contexts

final report

working meetings with the entire project group, with/without expert participation

participation in scholarly conferences (information about the project)

publication: doctoral dissertations, scholarly and popular articles

References

- Agar, M. (1980). *The professional stranger. An informal introduction to ethnography*. New York, NY: Academic Press.
- Atkinson, J.M., & Heritage, J. (eds.) (1996). *Structures of social action. Studies in conversation analysis*. Cambridge, UK: Cambridge University Press.
- Autio, O. & Hansen, R. (2002). Defining and measuring technical thinking: Students' technical abilities in Finnish comprehensive schools. *Journal of Technology Education*, 14, (5–19).
- Berge, B.-M. (1992). *Gå i lära till lärare. En grupp kvinnors och en grupp mäns inskolning i slöjdläraryrket* (Akademiska avhandlingar vid pedagogiska institutionen, 33). Umeå: Umeå universitet.
- Borg, K. (1995). *Slöjdämnet i förändring 1962–1994*. Linköpings universitet, Institutionen för pedagogik och psykologi.
- Borg, K. (2001). *Slöjdämnet: intryck – uttryck – avtryck* (Linköping Studies in Education and Psychology, 77). Linköping: Linköpings universitet. (Diss.)
- Carldén, C.-E. (1991). *Från söndagsskola till gymnasieskola. Yrkesutbildningen i Karlstad under 150 år*. Värmlands museums skriftserie 22. Karlstad: Värmlands museum.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety: The experience of play in work and games*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. & Csikszentmihalyi, I.S. (eds.) (1988). *Optimal experience*. Cambridge, UK: Cambridge University Press.
- Csikszentmihalyi, M. & Larsson, R. (1987). Validity and reliability of the Experience Sampling Method. *Journal of Nervous and Mental Disease*, 175, 525-536.
- Edgren, L. (1987). *Lärling – gesäll – mästare. Hantverk och hantverkare i Malmö 1750–1847*. Lund: Dialogos.
- Eisner, E.W. (2002). *The arts and the creation of mind*. New Haven: Yale University Press.
- Elsner, E. (1999). *Den nyestetiska rörelsen inom pedagogiken i England och USA* (Stockholm Library of Curriculum Studies, 5). Stockholm: HLS förlag.
- Elsner, E. (2002) Så tänker lärare i estetiska ämnen. *Häftet för didaktiska studier 70/71*. Stockholm: HLS förlag.
- Engeström, Y. (1993). Developmental studies of work as testbench of activity theory: The case of primary care medical practice. In Chaiklin, S. & Lave, J. (eds.), *Understanding practice. Perspectives on activity and context* (pp. 64–103). Cambridge, Mass.: Cambridge University Press.
- Erickson, F. (1992). Ethnographic microanalysis of interaction. In LeCompte, M.D., Milloy, W.L. & Preissle, J. (eds.), *The handbook of qualitative research in education* (pp. 201–225). San Diego, CA: Academic Press.
- Eriksson, K.H., Guttormsen, E., Lundberg, T., & Malmberg, K. (1980). *Skolan och slöjden. Slutrapport. Projektet Laborativ Slöjd* (LiU-PEK-R-53). Linköping: Linköpings universitet, Pedagogiska institutionen.
- Fromark, K. (1988). *Yrkesutbildning i Malmö under 150 år. Minnesskrift över utvecklingen från söndagsskola till gymnasieskola, Värnhemsskolan, Malmö*. Malmö: Värnhemsskolan.
- Greijer, G. (1988). *Från slöjdskola till gymnasieskola: en historik över Södertälje yrkesskola 1866–1971*. Södertälje: Östra Södermanlands kulturhistoriska förening.
- Halvorsen, EM. (2001). *Læreren som kulturbærer og kulturbygger*. Kristiansand: HøyskoleForlaget, Norwegian Academic Press.

- Harland, J., Kinder, K., Haynes, J. & Schagen, I. (1998). *The effects and effectiveness of arts education in schools*. Interim report 1. Slough, UK: NFER.
- Harland, J., Kinder, K., Lord, P., Stott, A., Schagen, I. & Haynes, J. (2000). *Arts education in secondary schools: Effects and effectiveness*.
- Hartman, P. (1984). *Slöjd för arbete eller fritid?* Stockholm: Högskolan för lärarutbildning i Stockholm, Institutionen för pedagogik.
- Hartman, S.G., Thorbjörnsson, H., & Trotzig, E. (1995). *Handens pedagogik. Kulturarv och utveckling i skolslöjden* (Skapande Vetande, 29). Linköping: Linköpings universitet.
- Have, P., & Psathas, G. (eds.). (1995). *Situated order. Studies in the social organization of talk and embodied activities*. Washington, DC: University Press of America.
- Hedman, A. (2001). *I nationens och det praktiska livets tjänst. Det svenska yrkesskolesystemets tillkomst och utveckling 1918 till 1940*. Umeå universitet, Pedagogiska institutionen, 57.
- Helgadóttir, G. (1997). *Icelandic craft teachers' curriculum identity as reflected in life histories*. Vancouver, Canada: University of British Columbia.
- Jernström, E. (2000). *Lärande under samma hatt. En lärandeteori genererad ur multimetodiska studier av mästare, gesäller och lärlingar* (Doktorsavhandling, 2000:20). Luleå tekniska universitet, Institutionen för lärarutbildning.
- Johansson, M. (1994). *Slöjdprocessen – arbetet i slöjdsalen. Dagboksanteckningar* (Forskningsrapport, 11). Göteborg: Göteborgs universitet, Institutionen för slöjd och hushållsvetenskap.
- Johansson, M. (1999). Sociokulturella praktiker i slöjden. *Nordisk Pedagogik*, 19(2), 98–115.
- Johansson, M. (2002). *Slöjdpraktik i skolan – hand, tanke, kommunikation och andra medierande redskap* (Göteborg Studies in Educational Science, 183). Göteborg: Acta Universitatis Gothoburgensis.
- Johansson, U. (1987). *Att skolas för hemmet: trädgårdsskötsel, slöjd, huslig ekonomi och nykterhetsundervisning i den svenska folkskolan 1842–1919 med exempel från Sköns församling* (Akademiska avhandlingar vid Pedagogiska institutionen, 21). Umeå: Umeå universitet.
- Kantola, J., Nikkanen, P., Kari, J. & Kananoja, T. (1999). *Kasvatus työn kautta työhön. Teknologiakasvatuksen isä Uno Cygnaeus*. Jyväskylä: Kasvatustieteen tutkimuslaitos.
- Kjosavik, S. (1998). *Fra ferdighetsfag til forming. Utviklingen fra tegning, sløyd og håndarbeid til forming sett i et læreplanhistorisk perspektiv*. Universitetet i Oslo, Det utdanningsvitenskaplige fakultet (Diss.).
- Kragelund, M. (1989). *Opdragende håndarbejde. En undersøgelse af håndarbejdsfaget, dets metode og dets bevidsthedsdannende virkning i almueskolen 1880-1910*. Copenhagen: Danmarks lærehøjskole, Institut for æstetiske fag og mediepedagogik. (Diss.)
- Larsson, L. (2001). *Industri- och hantverksutbildning under två sekel. Årsböcker i svensk undervisningshistoria, 194*. Uppsala: Föreningen för svensk undervisningshistoria.
- Larsson, S.-A. (ed.). (1991). *Från yrkesskola till S:t Eriks gymnasium. En minnesbok om industri och hantverksutbildning i Stockholm*. Stockholm: S:t Eriks gymnasium.
- Lindberg, V. (2003). *Yrkesutbildning i omvandling. En studie av lärandepraktiker och kunskapstransformationer* (Studies in Educational Sciences, 64). Stockholm: HLS förlag. (Diss.)
- Linde, G. (1988a). *Tjugo yrkeslärare: En studie av läroplanstillämpning på gymnasieskolans yrkeslinjer*. Högskolan för lärarutbildning i Stockholm, Institutionen för pedagogik.
- Linde, G. (1988b). *Yrkesutbildning i Tanzania: En fallstudie av Dar es Salaam National Vocational Training Centre*. Högskolan för lärarutbildning i Stockholm, Institutionen för pedagogik.
- Lindell, I. (1992). *Disciplinering och yrkesutbildning: Reformarbetet bakom 1918 års praktiska ungdomsskolereform*. Årsböcker i svensk undervisningshistoria, 172. Uppsala: Föreningen för svensk undervisningshistoria.
- Lindström, L. (2001). Från novis till mästare. En studie av bedömningskriterier i slöjd. In Nygren-Landgårds, C. & Peltonen, J. (eds.), *Visioner om slöjd och slöjdpedagogik* (pp. 251–280). Åbo Akademi, Inst. för lärarutbildning, Vasa, Finland.
- Lindström, L. (2002a). Att lära genom konsten. En forskningsöversikt. In Hjort, M. (ed.), *Kilskrift. Om konstarter och matematik i lärandet* (pp. 106–131). Stockholm: Carlsson.
- Lindström, L. (2002b). Produkt- och processvärdering i skapande verksamhet. In Skolverket (2002), *Att bedöma eller döma. Tio artiklar om bedömning och betygssättning* (pp. 109–124). Stockholm: Skolverket/Liber Distribution.
- Lindström, L., Arnegård, J. & Ulriksson, L. (2003). Tonåringars upplevelse och prestation i skolan – en fråga om klassbakgrund? In Persson, A. (ed.), *Skolkulturer* (pp. 71–100). Lund: Studentlitteratur.

- Lindström, L., Ulriksson, L. & Elsner, C. (1999) *Portföljvärdering av elevers skapande i bild*. Stockholm: Skolverket/Liber Distribution (rapport med CD-ROM och videofilm).
- Magnusson, A. (1998) *Lärarkunskapens uttryck – en studie av lärares självförståelse och vardagspraktik*. Linköping: Linköping Studies in Education and Psychology, 58.
- Malmberg, E. (1995). *Att upptäcka systemnätverk i edukativ slöjd. Analyser av elevens slöjdhandlingar i en kontext. En paradigmutvecklande ansats* (Diss., Vasa, Institutionen för lärarutbildning). Åbo: Åbo Akademis förlag.
- Nilsson, L. (1981). *Yrkesutbildning i nutidshistoriskt perspektiv: Yrkesutbildningens utveckling från skräväsandets upphörande 1846 till 1980-talet samt tankar om framtida inriktning*. Göteborg Studies in Educational Sciences, 39. Acta Universitatis Gothoburgensis. Göteborgs universitet.
- Nygren–Landgårds, C. (2000). *Educational and teaching ideologies in sloyd teacher education* (Diss., Vasa, Institutionen för lärarutbildning). Åbo: Åbo Akademi University Press.
- Ritchhart, R. (2002). *Intellectual character: What it is, why it matters, and how to get it*. San Francisco, CA: Jossey-Bass.
- Ritchhart, R. (n.d.). *Mental models, instructional values, and the development of students' intellectual character. A tale of two teachers*. Harvard Project Zero, unpublished manuscript.
- Säljö, R. (2000). *Lärande i praktiken. Ett sociokulturellt perspektiv*. Stockholm: Prisma.
- Salomon, O. (1882). *Slöjdskolan och folkskolan, Part 4: En pedagogisk studie*. Göteborg.
- Silverman, D. (1995). *Interpreting qualitative data. Methods for analysing talk, text and interaction*. London: Sage Publications.
- Silverman, D. (ed.) (1997). *Qualitative research. Theory, method and practice*. London: Sage Publications.
- Sjögren, J. (1991) Praktiskt i skolan. Synen på praktiskt arbete och slöjd i utredningsarbetet 1940–1962 inför en ny obligatorisk skola. Linköping. *Arbetsnotat nr 85 från Tema T, Linköpings universitet*.
- Sjögren, J. (1997). *Teknik – genomskinlig eller svart låda? Att bruka, se och förstå – en fråga om kunskap* (Linköping Studies in Art and Science, 154). Linköping: Linköpings universitet.
- Skolverket, (1993). *Slöjd. Huvudrapport* (Skolverkets rapport, 24). Stockholm: Liber.
- Skolverket, (1994). *Slöjdprocessen – om arbetsformer och kunskap* (Skolverkets rapport, 58). Stockholm: Liber.
- Skolverket, (2001). *Att organisera kunskap. Om skolans kunskapsuppdrag i teorin, i praktiken och i framtiden*. Stockholm: Skolverket / Liber Distribution.
- Spångberg, E. (1987). *Västerviks slöjdskola, möbelsnickarskola och yrkesskola: åren 1880–1980*. Stockholm: Författares bokmaskin.
- Thavenius, J. (2002). Estetik och skola. Några synpunkter på forskningsläget. In Aulin-Gråhamn, L. (ed.), *Kultur, estetik och skola. Några forskningsperspektiv* (pp. 43–66) (Rapporter om utbildning, 2002:9). Malmö Högskola, Lärarutbildningen.
- Thorbjörnsson, H. (1990). *Nääs och Otto Salomon – slöjden och leken*. Helsingborg: Ordbildarna.
- Trotzig, E. (1992). *Qvinnan bär hemmets trevnad på spetsen av sin synål* (Högskolan för lärarutbildning i Stockholm, Skeptronhäften, 8). Stockholm: HLS.
- Trotzig, E. (1997). *”Sätta flickan i stånd att fullgöra sina husliga plikter”. Fyra märkeskvinnor och flickors slöjdundervisning* (Linköping Studies in Education and Psychology, 54). Linköping: Linköping University.
- Wertsch, J.V. (1998). *Mind as action*. Oxford, UK: Oxford University Press.