

## Otto Salomon and Aksel Mikkelsen, and their Pedagogical Models for Establishing Sloyd Education in Denmark and Sweden

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### Abstract

Pedagogically aimed craft education, or Sloyd, was established in Scandinavia at the close of the 19th century as a specific subject to be included in general education. The term Sloyd means skilful or handy and refers to the making of crafts (Chessin, 2007). Historically however, Sloyd also refers to discussions amongst educationalist at the end of 19<sup>th</sup> century about the value of craft for general education (Borg, 2008). The aim of Sloyd was to use handicraft as a platform in general education to build the character of the child, encouraging moral behaviour, greater intelligence and industriousness (Thorarinsson, 1891). Otto Salomon in Sweden and Aksel Mikkelsen in Denmark were the major leaders in the development of a systematic Sloyd education. Their models for Sloyd underlined the pedagogical value of handicraft activities as a part of compulsory education (Kantola, et al., 1999). However, there were differences between Salomon's and Mikkelsen's models of Sloyd. The Swedish system was based on individual learning, but the Danish system was centred on class instruction. Later, the two Sloyd models were disseminated and used by many teachers from all over the world. Most of these attended Salomon's courses in Naas, but some went to Mikkelsen's courses in Copenhagen. The ideology of Sloyd spread to different countries in the 20th century and became the basis of early handicraft education in many countries (Bennet, 1926), and it also gave rise to the development of theories for formal education.

**Keywords:** Otto Salomon, Aksel Mikkelsen, Sloyd, pedagogy, Denmark, Sweden

### Introduction

The educational system of Sloyd (slöjd) developed into a separate subject in Scandinavia at the beginning of the 20th century. It was based on 19th century ideas concerning the practical application of crafts as a means to facilitate general education based on common pedagogical goals. The nature of Sloyd education was initially separated from home industry, which, unlike Sloyd, was meant to empower self-sufficiency in homes and provide young craftsmen with the opportunity to sustain a living through woodwork (Olafsson & Thorsteinsson, 2009).

The term Sloyd is related to the old Icelandic word 'slægur', with its original meaning being connected etymologically with the English word sleight (as in "sleight of hand"), meaning cunning, artful, smart, crafty and clever (Nudansk Ordbog, 1990; Den Danske Ordbog, 2003 -2005; Borg, 2006). Sloyd involves school activities that use craft to produce useful and decorative objects. The meaning of Sloyd in relation to education refers to discussions amongst 19<sup>th</sup> century philosophers about the value of craft in general education (Borg, 2006).

The Finn, Uno Cygnaeus and the Swede, Otto Salomon, together with Aksel Mikkelsen from Denmark, initiated the Sloyd system. The ideology of Sloyd was introduced into the world-wide context by their students, mainly those of Salomon and Mikkelsen. In 1875, Salomon founded a pedagogically orientated teachers' courses in Nääs, in the south of Sweden, where handicrafts was taught. By 1880's the courses had become an international training centre for aspiring woodwork teachers (Bennett, 1926; Thorbjörnsson,

1992). In 1886, Mikkelsen established a Sloyd teacher training school in Copenhagen: The Danish Sloyd Teachers' College, known locally as the "Dansk Sløjdlærerskole". (Kantola et al., 1999).

This article first defines the Sloyd pedagogy and it then outlines the initial systems for Swedish and Danish Sloyd and the differences between these two systems. Finally, the authors discuss the topic, draw their conclusions and reflect on the pedagogical value of Sloyd as a part of general education.

### **The Swedish Sloyd system**

Salomon developed his training system in pedagogical Sloyd by analysing work processes and scrutinizing objects made of wood in order to determine the typical methods used by professional woodworkers (Svenson, 2012). The holistic development of the pupil's capabilities became the core of his educational theory. Salomon underlined the importance of teaching craft to support the pupil's individual development, as this would ultimately shape him or her into a good citizen (Moreno, 1999).

Salomon's teaching methods were well organized (Bennett, 1926). He structured the training system to progress from simple exercises to complex ones. The pupils learned to use different tools, beginning with the simplest ones. Models and methods of woodwork were numbered according to their level of difficulty. For example, when working with model no. 1 (brush handle) methods 1 and 2 were applied (sawing lengthwise and crosswise). When working on model no. 2 (pencil rack) an additional two methods, 3 and 4, were applied (sawing and rasping). By the time the pupil had finished all of the 40 models, all of the 24 methods had been used (Thorbjörnsson, 2000). The series of models changed as time went by, and pupils were given more freedom to choose between projects and exercises according to their interest and abilities instead of working entirely from prefigured models (Hartman et al., 1995).

Salomon's teaching was individually based. The following three elements characterized his method: (1) creation of useful objects, (2) analysing of work processes, and (3) the teaching method (Bennett, 1926, p. 64). Through the first models, the pupils were taught basic craft skills such as carving, sawing, shaping, planning, and drilling. During the middle of the model series, joinery was taught, involving screws, dowels, dovetail joints and cross lap joints. Towards the end of the model series, techniques such as mortise and tenon were taught.

The work processes were vital elements of Salomon's methods. He required the pupils to analyse the work process before starting. Salomon described the work process as a systematic and realistic path towards an explicit goal (Bennett, 1937). He underlined the importance of practical and useful artefacts that could be used in daily life. It was said that a pleasant atmosphere always characterized the woodwork classroom while the pupils worked on their projects (Thorbjörnsson, 1990).

### **The Danish Sloyd system**

After attending a course in Nääs with Salomon, Aksel Mikkelsen went on to establish a system for teaching Sloyd that was aimed at its becoming a general subject in Danish schools. Subsequently, Mikkelsen started his Handicraft School in Copenhagen (1883). Later, he began to educate Danish school teachers to teach Sloyd (Kantola et al., 1999).

Mikkelsen formulated his own Sloyd system known as Danish School Sloyd. Mikkelsen's system, unlike Salomon's, was not individually based but was built on class instruction (Kananoja, 1989). Mikkelsen designed small work benches and tools for children, both left- and right-handed. The saw became the main tool in Mikkelsen's system, and all new classes started with models made using a saw only, without using a plane. Files and sand paper were not used: they were forbidden because they could hide faults. The pupils first had to become skilled in using the fundamental tools in doing specific exercises. For example, they had to saw and plane together rhythmically. The lesson plan also had to meet the varying needs of individual

pupils, and therefore he designed so-called, side projects. Woodwork was the only activity undertaken because the school time allocated to Sloyd was felt to be too restricted (Bennett, 1937). The underlying principles of the Danish Sloyd system were:

1. The starting point of all Sloyd instruction should be the natural interests of the child (The Danish Sloyd Guide 1893, p. 2).
2. The material used should be wood and the tools should only be those in common use. In general, the things made should be objects used in daily life, especially those that required a coat of paint to be finished (The Danish Sloyd Guide 1893, p3).
3. The course of instruction should be organised so as to consist of (a) a small or limited number of models with the exercises progressively arranged, and (b) an unlimited number of coordinated extra models (The Danish Sloyd Guide 1893, p. 3).
4. Preparatory exercises should precede the work of making the models whenever it was thought desirable to single out a particular process for practice, but the preparatory exercises were always to be followed by the making of the corresponding model (The Danish Sloyd Guide 1893, p. 3).
5. Both class and individual instruction should be employed. Class instruction should be employed to show correct working positions, demonstrate the proper use of the tools and the sequence of operations needed for the correct construction, etc. (The Danish Sloyd Guide 1893, p. 4).
6. During class instruction, the general appearance of a model or exercise piece and the general method for making it should be taught by showing the model itself and explaining it; whereas the details of the construction and the procedure should be taught through the use of drawings on the black board, which were to be copied by the pupils into their notebooks (The Danish Sloyd Guide, 1893, p. 4).
7. Tools should be selected or especially constructed to suit the child's size and strength, and no tool should be used by a pupil until its use and "technology" had been fully explained (The Danish Sloyd Guide 1893, p. 5).
8. The marks of the cutting tools should not be "effaced by the finishing" (The Danish Sloyd Guide 1893, p. 5).

### Swedish Sloyd versus Danish Sloyd

Otto Salomon and Aksel Mikkelsen's systems for pedagogical Sloyd were similar in general, and both were based on the ideals of Sloyd. The main aim of this system was to develop the individual in general through handicraft education and to develop a good citizen (Hartman, Thorbjörnsson & Trotzig, 1995). Both Salomon and Mikkelsen separated the Sloyd pedagogy from practically applied handicraft and saw the value of Sloyd as part of a general education. Moreover, both Salomon and Mikkelsen based their teaching on their own unique model series.

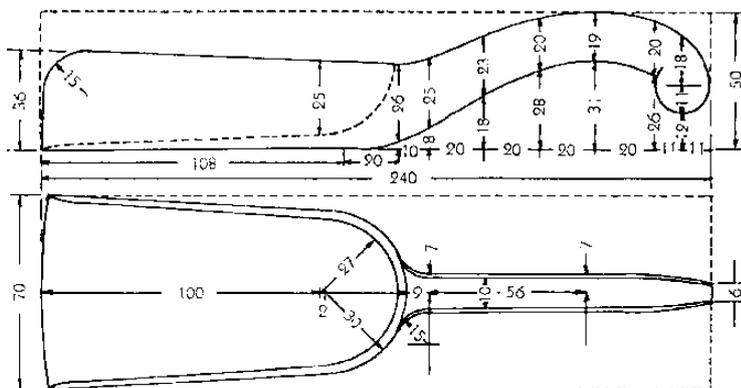


Figure 1. A drawing of a spoon from Salomon's model series.

The teacher played a fundamental role, in both systems, and the pedagogical education was essential. Both systems shared similar aims:

- To indoctrinate students with a positive attitude towards practical work and to teach them to value handicraft
- To develop independence in pupils
- To train pupils in honesty, orderliness and tidiness
- To develop pupils' concentration
- To increase pupils' efficiency and tenacity
- To improve pupils' physical condition
- To train pupils' understanding of form and design
- To increase general skill and knowledge.

(Thorbjornsson, 1992; Thorsteinsson & Olafsson, 2013)

Nevertheless, despite their shared pedagogical foundations, there were also fundamental differences in the teaching approaches of these two men. The following table shows the commonalities and differences between their two systems.

Swedish Sloyd	Danish Sloyd
The system was intended for 10 to 14 year old pupils	Pupils started when 5 or 6 years old
Small classes, suited for individual instruction	Big classes used class instruction methods
Focus on woodwork and a good finish	Focus on rough woodwork
The knife was the first tool to be used	The saw was the first tool to be used
Exercises in tool usage before starting on projects	Preparatory exercises should precede the work of making models
Common and full size tools used	Used common tools specially constructed for children's size and strength
Exercises classified according to the difficulty level of the project	18 exercise groups according to the use of different tools. All pupils worked within the same group of exercises
Exercises were individual and not rhythmically undertaken in a group	Rhythmical group exercises used to teach usage of new tools
Tools were used once their use had been fully explained and practised	Tools were used once their use had been fully explained and practised
Use of sanding paper and files allowed and a good finish emphasised. Sometimes the projects were decorated	Files and sandpaper were rarely used as the tool marks should not be hidden. Sometimes the projects were painted
New models were outlined by the teacher or given in printed form. Pupils made their own drawings and analysed the work concerning	Pupils had to make drawings and write descriptions of the projects before starting

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the methods and tools that should be used before starting	
Main focus on individualised learning. Pupils were allowed to progress at their own speed	Focus on group work and all started at the same time on the main projects. More skilled pupils made additional, coordinated models according to their speed
Main focus on individual teaching	Main focus on group instruction
Working positions practised. Pupils switched between working with the project and exercising	Working positions practised
Preferably taught by educated teachers	Preferably taught by educated teachers
Projects were, in general, objects used in daily life	Projects were, in general, objects used in daily life
A series of models, and pupils progressed at their own speed	A small number of models and exercises progressively arranged. Lot of extra models

*Table 1: The main characteristics and the Swedish and Danish Sloyd systems (Bennett, 1937; Thane, 1914; Thorbjornsson, 1990; Salomon, 1904; The Danish Sloyd Guide, 1893).*

As seen in the table above, pupils started at different ages in the two systems. In the Danish Sloyd system the pupils started at age 5-6. Therefore, because of the younger age, Mikkelsen focused on rough woodwork in the early classes. Salomon's pupils in Sweden, however, were allowed to use files and sanding paper from the beginning, but they were older and therefore more mature, patient, and their coordination was better. Mikkelsen also wanted the pupils to get properly trained in using tools. By using sanding paper and files too early, he felt they would not reach an acceptable level of skill.

Mikkelsen designed special tools and work benches for his young pupils, both left- and right-handed, while Salomon simply used the smallest sizes of tools made for adults with normal work benches. In the Danish Sloyd classes, the saw was used as the main tool and all classes started with models made with a saw, without using a plane.

Unlike Salomon, Mikkelsen was focused on class instruction, teaching bigger classes than Salomon did (Bennett, 1937). He used rhythmical exercises to increase pupils' physical strength and to practice their use of tools. Salomon's teaching was mainly individual based. His exercises were mainly designed to prepare pupils for using the different tools.

Both Salomon's and Mikkelsen's pupils were allowed to progress at their own speed. However, Salomon's pupils were allowed to continue with the main projects regardless of other pupils' achievement levels. Mikkelsen's pupils, on the other hand, had to work simultaneously on the main projects, but pupils who were more skilled were allowed to make additional, complementary models, according to their varying speeds. The first project was a flower pin and the last a box for knives.

Salomon allowed his pupils to use sanding paper and encouraged them to decorate their projects. However, according to Mikkelsen, it was following the principles of the system that had pedagogical meaning, and thus it was meaningless to put effort into surface treatments. Consequently, in the Danish system, the use of sandpaper to hide scratches or covering mistakes with paint was forbidden (Mikkelsen, 1886).

## Discussion and conclusion

The two educators, Otto Salomon and Aksel Mikkelsen, both examined the constituent elements of educational handicraft from the psychological, physiological and moral aspects. However, probably because of their different backgrounds and circumstances they created two different systems for pedagogical Sloyd. The two educators had different visions for the role of pedagogical Sloyd as a part of school education.

We could define Mikkelsen as being more pedagogically thinking as he started with younger pupils and perhaps he was more focused on the development of the pupils. This appears, for example, in his emphasis on gross woodwork during the first classes. Perhaps he was focusing on the developmental aspects rather than the artefacts. He also wanted Sloyd to be part of general education from an early age, based on class instruction. Consequently, his system for Danish School Sloyd was easier to run at schools, and therefore more economical and likely to be supported as a part of general education. In his pedagogical journal “Opdrageren” he underlined the ideology of Sloyd as building up the psychological, physical and the practical in pupils: “Danish School Sloyd starts when pupils begin their school attendance and tries to get into continuous connection with the school. It is based on the child’s area of interest and need for practical activities” (Mikkelsen, 1891, p.10).

Salomon’s focus on individual learning was also pedagogically based, but required fewer pupils to be in the classes. His use of individualised instruction adapted itself to the abilities of each pupil. The individual pupil became the centre of his system and facilitation of the holistic development of that pupil’s capabilities was placed at the forefront of learning. However, Mikkelsen emphasised the pedagogical benefits of his own system and criticised Salomon’s methods as being too unsophisticated and too close to the so-called “Swedish home Sloyd”.

The fascinating aspect of the Swedish Sloyd system was that all instruction was given through individual teaching. We would consider Salomon’s method as more modern today. Individualised instruction and related educational methods of instruction are considerably used at schools today. It is a method in which the content, the instructional technology (such as the materials) and the pace of learning are based upon the abilities of the individual learner. It includes the teacher trying to fulfil the individual needs of each pupil. Therefore, pupils can progress at their own speed, simultaneously undertaking projects at different difficulty levels. Pupils’ active participation and responsibility for their own studies is vital. Class instruction is quite the opposite, being a method in which content, materials and pace of learning are the same for all pupils in a classroom or course, regardless of individual ability or interest (Tomlinson & Allan, 2000).

In Salomon’s *Theory of educational Sloyd* (1896), he compares class teaching with individual teaching. Salomon considered that class teaching, as he called it, was not good neither in Sloyd nor in any other subject. The more individual our teaching becomes, he said, “the nearer—other things being equal—it approximates a good educational ideal” (Salomon, 1886, p. 65). He, moreover, doubted the value of emulation and considered it would work both ways: “The industrious boy depends on the lazy boy far more than the lazy boy depends on him” (Salomon, 1886, p. 65). Nevertheless, Salomon confessed that class teaching was cheaper to run, but not as good educationally. He estimated that 15 or 16 pupils were sufficient for one teacher and that 20 was the maximum.

He considers a single fixed course as desirable for each pupil, and the enrichment of a course for certain individual pupils by the introduction of supplementary models as both a waste of time and an interruption of attention from the actual work of the course. The teacher should meet the problem of individual dissimilarities in pupils by encouraging each pupil to go as fast as possible within the suggested limits of

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the series of models, but he would not allow the pupil to do work outside of these (Bennett, 1937). Salomon recommended a rigid course of instruction that followed a fixed series of models. This position led him to contrast class and individual teaching according to their most extreme forms (Salomon, 1886).

Salomon and Mikkelsen often criticised each other. Furthermore, the two systems were also criticised by other educators, for example for not allowing flexibility for creativity (Thorsteinsson & Olafsson, 2012). Therefore, at a later point, they both found it worth extending the range of their respective systems, Mikkelsen with what he called “*side-work projects*” and Salomon with “*extra-models*” (Bennett, 1937). Later, Salomon also gave pupils more opportunities for making their own decisions once they had gained the fundamental skills in their craft. The Danish Sloyd system was also criticised for being too technical compared to the Swedish one. Therefore, some educators saw it as being better suited to preparing pupils for vocational education rather than as a part of general education. Nevertheless, Mikkelsen believed in his methodology and analysed his approach as being pedagogical and following the ideology of Sloyd.

**SALOMON AND MIKKELSEN WERE BOTH INITIATORS OF SLOYD EDUCATION IN THEIR HOME COUNTRIES, SWEDEN AND DENMARK. THEY BOTH BELIEVED IN THEIR OWN METHODOLOGY AND DEDICATED THEIR LIVES TO THE DISSEMINATION OF SLOYD EDUCATION. BECAUSE OF THEIR PEDAGOGICAL APPROACHES AND AMBITIONS, SLOYD BECAME AN IMPORTANT PART OF BOTH SWEDISH AND DANISH PUBLIC EDUCATION. MOREOVER, MANY TEACHERS FROM OTHER COUNTRIES ATTENDED THEIR CLASSES AND BECAME PROMOTERS OF SLOYD EDUCATION IN THEIR OWN COUNTRIES (OLAFSSON & THORSTEINSSON, 2009).**

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