



Materiality, Wallcharts, and Educational Change in Sweden from the Mid-nineteenth to the Early Twentieth Century

Jakob Evertsson

Abstract • This article investigates the dissemination of wall charts as an instructional technology in the subjects of history, geography, natural science, and geometry in elementary schools in Sweden, particularly in the Uppsala diocese from 1861 to 1910. Previous research lacks empirical analyses of the charts' actual dissemination, making this case study of Sweden a valuable contribution to the fields of material culture and the visual aspects of schooling in the history of education. Using school inspector reports, protocols from national inspector meetings, and national and regional pedagogical statistics, the article provides empirical evidence of the active work of school inspectors and state initiatives that contributed to the widespread dissemination and use of wall charts in Swedish elementary schools by 1910.

Keywords • wall charts, material culture, dissemination, school inspection, elementary school

Introduction

Visual teaching technologies were introduced in elementary schools across the world in the late nineteenth century, although using pedagogical tools other than texts was by no means a new phenomenon. Perhaps most notably, in 1658 the Czech theologian and educator Johann Amos Comenius published *Orbis Pictus*, a visual aid textbook for teaching theology and the sciences. However, the use of different educational media grew substantially from the late nineteenth century. An important pedagogical prerequisite was the introduction of group instruction or classroom teaching, which facilitated the use of wall charts. The production costs for such materials were gradually reduced by improved printing techniques, making them more affordable for local schools.¹ However, our knowledge of the dissemination of wall charts is still very limited. A study in this area might provide insights into the growing availability of visual materials during an era of expanding mass education.

The purpose of this study was therefore to investigate how wall charts were disseminated as an instructional technology among local schools in the Uppsala diocese in the centre of Sweden from 1861 to 1910, especially in light of the role and influence of school inspections and the state. This article is intended to contribute to international, particularly Nordic, research on the material and visual classroom by investigating the case of Sweden. I focus on wall charts in the theoretical subjects of history, geography, natural sciences, and geometry. These subjects were classified as “above minimum” in the elementary school statute, while “minimum” studies were reading, writing, calculation, and Christianity.² The minimum subjects were

1 Sevan Terzian, “The History of Technology and Education,” in *The Oxford Handbook of the History of Education* ed. John. L. Rury and Eileen H. Tamura (Oxford: OUP, 2019), 555–56.

2 SFS 1842:19, Kongl. *Maj:ts nådiga stadga angående folk-undervisningen i riket. Gifwen den 18 junii 1842.*

prioritised, while those “above minimum” were largely optional in the early phase of the elementary schools, but increasingly taught from the 1860s onwards. The study of the implementation of wall charts in these subjects is therefore also a study of the implementation of a broader curriculum.

The research questions this study aimed to answer are (1) How were wall charts implemented as a teaching technology in the subjects of geography, history, natural science, and geometry in the Uppsala region of Sweden from 1861 to 1910? (2) In what ways did the state, through the employment of school inspectors and other initiatives, contribute to the dissemination of the wall charts? and (3) What might be said about the development of visual teaching practices in the region of Uppsala and how these developed during that period?

Previous research

International research show that the use and dissemination of wall charts in different subjects in the elementary schools in Europe began, at least on a minor scale, as early as 1850. Massimiano Bucchi investigated German wall charts in science from 1850 to 1920, citing educational reforms, technical developments, and the pedagogical emphasis on the visual as important reasons for their success in schools. This was particularly the case in botany and zoology, where teaching was facilitated by large images.³ Maria del Mar Pozo Andrés studied the use of wall charts in history in Spanish elementary school from 1860 to 1939 and demonstrated that these images aimed to instil national ideals in the child rather than knowledge of history. Historical wall charts in Spain consisted not only of depictions of international Catholic history, but also of national scenes produced in Spain. Dissemination of this material was initially slow due to high costs and a lack of instructional manuals.⁴ Karl Catteeuw, in his doctoral dissertation on the use of wall charts in Belgian schools, argued that due to a pervasive oral culture, these images had little initial impact but eventually, through the growth of commercial enterprises and state inspections, became prominent in the classroom.⁵ Fabio Targhetta, discussing wall charts in Italian schools, focused more on their production and argued that their dissemination was facilitated by both the lack of illustrations in textbooks and the *Rules for Primary Education* (1860) that called for using wall charts for geography, geometry, and natural science.⁶

Although different aspects of wall charts have been investigated in international research, comprehensive empirical studies on their actual *dissemination* and *availability* remain largely lacking. Instead, the focus has mainly been on the pedagogical aspects of this technology and why it became successful in teaching. Some limited research has also been pursued on the dissemination and use of wall charts in Sweden, however. Olof G. Jonsson, adopting a broad perspective,

3 Massimiano Bucchi, “Images of Science in the Classroom: Wall Charts and Science Education 1850–1920,” *British Journal for the History of Science* 31, no. 2 (1998), 161–84.

4 Maria del Mar del Pozo Andrés, “Nacionalismo, globalización y cultura escolar: láminas murales para la enseñanza de la historia (1860–1939),” *Revista Mexicana de Historia de la Educación* 1, no. 1 (2013), 1–28.

5 Karl Catteeuw, *Als de muren konden spreken: schoolwantsplaten en de geschiedenis van het Belgisch lager onderwijs*. Doctoral diss. (Leuven: Katholieke Universiteit, 2005), ch 3.

6 Fabio Targhetta, “Teaching with images between 19th and 20th centuries: the case of the Italian school publisher Paravia,” *Strenæ: Reserches sur les livres et objets culturels de l'enfance* 8 (2015).

investigated the conscious visual argument of wall charts in the elementary schools and pointed out the significance of inspector reports in their development.⁷ Lena Johannesson briefly discussed the technical production of wall charts, especially the move from international imports to domestic production in the late nineteenth century.⁸ In a more comprehensive study, I showed how the dissemination of wall charts for biblical history was facilitated by the introduction of school inspections in 1861 and other state initiatives such as government subsidies. Improved printing techniques and pedagogical developments also played a part in schools' willingness to use visual media.⁹ That study, however, did not focus as much as the current study on the economics of wall charts and statistics on their dissemination, and it was limited to only the one subject.

Thus, the introduction and spread of wall charts in other subjects have not yet been studied from a broader perspective in Sweden or elsewhere. The present study may therefore contribute valuably to research on visual instructional technologies in elementary school. This article seeks to add to the previous research by studying the actual dissemination of wall charts in the "above minimum"-subjects in Swedish elementary schools from the mid-nineteenth to the early twentieth century. This time period is appropriate because it includes both the year school inspections were introduced (1861) and the first decade of the twentieth century, in which substantial achievements led to the general availability of wall charts in the elementary schools.

Theoretical perspective

Over the last two decades, historians of education have paid more theoretical attention to images, artefacts, objects, and technologies as worthy subjects of study in their own right. This theoretical development, incorporating the material aspects of teaching, has taken place against the transition from the traditional research area of the political, pedagogical, and institutional organisation to a focus on actual events in the classroom and the significance of the physical materials – often referred to as “the black box of schooling.”¹⁰ However, material studies discussing the role of images have generally been missing in the history of education despite the growing importance of objects in the classroom. As Daniel Lindmark pointed out, this area of theoretical discussion in Nordic research on the history of education is only in its infancy.¹¹ This has recently begun to change as scholars are paying more attention to the visual.¹² As Dussel and Priem recently pointed out, many current studies are

7 Olof G. Jonsson, *Skolplanschen: Argument i spänning mellan bild och text, perspektiv och kontext* (Uppsala: Uppsala University, 2006), 14, 83–84.

8 Lena Johannesson, *Den massproducerade bilden* (Stockholm: Almqvist & Wiksell, 1978), 143–50.

9 Jakob Evertsson, “Classroom Wall Charts and Biblical History: A Study of Educational Technology in Elementary Schools in Late Nineteenth- and Early Twentieth-Century Sweden,” *History of Education* 50, no. 5 (2014), 669–84.

10 Martin Lawn and Ian Grosvenor, “Introduction: The Materiality of Schooling,” in *Materialities of Schooling: design–Technology–Objects–Routines*, ed. Martin Lawn and Ian Grosvenor (Oxford: Symposium Books, 2005), 7; Marc Depaepe and Paul Smeyers, *Educational Research: Material Culture and its Representation* (Dordrecht: Springer, 2014), 3–4.

11 Daniel Lindmark, “Educational History in the Nordic Region: Reflections from a Swedish Perspective,” *Espacio, Tiempo y Educación* 2, no. 2 (2015), 20.

12 For example, the International Standing Conference on the History of Education (ISCHE) 43 to be held in Milan 2022 will have the theme “Histories of Educational Technologies: Cultural and Social Dimensions of Pedagogical Objects.”

in the intersection of visual and material studies, demonstrating the importance of merging these perspectives in the research.¹³ This, they argue, means that visual technologies studied as material practices “imply an impetus for reproduction and dissemination where images assume a hermeneutic role that is based on their physicality and presentational forms.”¹⁴ Images are seen as reproducible and mobile objects that act as threads in networks of meaning-making.¹⁵

This article combines the visual and the material in examining how wall charts were disseminated to the schools, and the role of the state in this process. Material considerations are the primary concern, but they are intrinsically related to pedagogical, cultural, and social development in schooling, which also receive attention. As Lawn and Grosvenor argued, instructional technologies can be regarded simultaneously as material structures (objects), working procedures, and a series of ideas and knowledge systems.¹⁶ Applying a broader perspective to the dissemination of wall charts, the article is inspired by the latest developments in the relation of material culture to specific objects in the classroom.¹⁷ In the context of material culture and dissemination of wall charts in schools, the article also incorporates the educational industry and transnational commerce in school objects into the economic dimension of mass schooling.¹⁸ The state, it has been claimed, played a significant role in the purchase and distribution of these educational technologies. As Gonçalves and Alcântara argued, the states that assumed responsibility for disseminating school materials in their territories demonstrated how public authorities organised themselves and maintained official institutions of education.¹⁹

Sources and method

The study mainly comprised a qualitative and quantitative historical analysis of printed school inspectors' reports from the diocese of Uppsala (*Berättelser om folkskolorna i riket afgifna av tillförordnade folkskoleinspektörer*; hereinafter, BFSR) which comprise the paper's main source material. Based on material collected during the visits, printed reports about the schools were published every five years or so in 1861–1910 and sent to the diocesan chapter and the Department of Ecclesiastical Affairs.²⁰ These reports cover 12 topics, although that number varies slightly during the first years, of which two are of particular relevance to this study: (1) Teaching in

13 Inés Dussel and Karin Priem, “The Visual in Histories of Education: A Reappraisal,” *Paedagogica Historica: International Journal of the History of Education* 53, no. 6 (2017), 642.

14 Dussel and Priem (2017), 645.

15 Ibid.

16 Martin Lawn and Ian Grosvenor, “Finding Traces, Researching Silences, Analysing Materiality: Notes from the United Kingdom,” *Educació i Història: Revista d'Història de l'Educació* 38 (2021), 50.

17 Heather Ellis argued that a significant area of research in the history of education is objects in teaching and their value as pedagogic tools. Heather Ellis, “Editorial: Science, Technologies and Material Culture in the History of Education,” *History of Education* 46, no. 2 (2017), 145.

18 Diana Gonçalves Vidal and Wiara Alcântara, “The Material Turn in the History of Education,” *Educació i Història: Revista d'Història de l'Educació* 38 (2021), 23–25.

19 Gonçalves and Alcântara (2021), 28.

20 A total of 950 copies of the report were printed in the diocese of Uppsala for the inspection period 1882–86. In other dioceses, it varied from 780 to 1010 copies. National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, F5B:1, Handlingar angående folkskoleinspektionen 1861–1907.

different disciplines and (2) teaching materials.²¹ Aside from the qualitative analysis of the reports, an important part of the methodology is the presentation of statistical data on the dissemination of wall charts, obtained through analysing acquisitions of wall charts from the school districts. The state's expenditures for the production of wall charts and lists of recommended teaching materials are also analysed to identify priorities during certain periods. Printed national school statistics is also used to compare regional conditions.²² Finally, although the study did not focus on an analysis of the illustrations, I did investigate the wall charts themselves to add to our understanding of the development of visual teaching over an extended period.

The regional statistics presented in the text concentrate on one of the four (later five) inspection districts that include both urban and rural areas.²³ This district is situated in the southern part of the Uppsala diocese (see Figure 1). Altogether, 82 parishes are represented in this sample. The statistical analysis of the district begins in 1881 following its geographical redefinition the previous year. This district was also selected because it provides statistical analyses written by the same school inspector, Herman Emanuel Hermansson, over 30 years, providing opportunities to follow development in one district over time. Hermansson also gave detailed statistics assessing the teachers' competence, which can be followed through the whole period he was active, 1881–1910.²⁴ Not all inspectors pursued their work in the exact same manner, which somewhat limits comparisons. In many deaneries, notes were not followed-up by a compilation of detailed statistics but functioned rather as an overall assessment of the teaching. During the first two decades of inspection, this was the norm for reporting, making inspectors' statements especially helpful. Discussions of the dissemination of wall charts, present in all included inspector reports, are referred to in the text. Thus, the analysis is based on all inspector reports in the Uppsala region and a local sample from one of the districts in this region during the selected period.

21 The number of issues monitored were more limited in the early inspector reports than in later.

22 *Bidrag till Sveriges officiella statistik: undervisningsväsendet 1876–1911, folkskolorna 1882–1910.* Central Bureau of Statistics, Stockholm (hereafter BISOS).

23 This district was comprised by the deaneries of Hagunda, Lagunda, Trögds, Åsunda, Håbo, Örbyhus, Norra, and Södra Fjärdhundra, the parishes in Öland and the Frösåker deanery of Uppsala County.

24 Such complete statistics is lacking in the other districts in the diocese of Uppsala for this entire period.

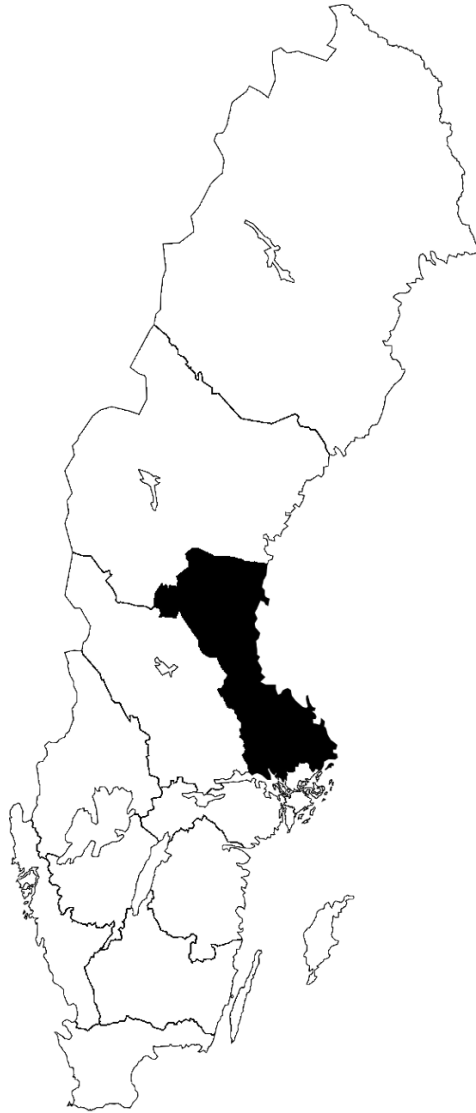


Figure 1. Map of Sweden with Uppsala diocese marked in black.

Although these reports comprise an important and understudied primary source for analysing the implementation of educational policy, several problems and limitations arise with their use. First, it might have been in the inspectors' interest to report progress in their work. Second, different districts and regions were inspected under different circumstances. Third, parishes might have been influenced by the inspector's personality and more willing to organise, build, and fund schools if

the inspector proceeded cautiously.²⁵ Fourth, the reports, which reflected national inspectors' views and the national mission, decentred the interests of the local school boards and teachers.²⁶ Despite these difficulties, however, the material provides a richer account of school development and the state's influence on educational change from 1861 to 1910 than most other sources. Furthermore, because of their top-down perspective, inspector reports may be used to understand local and regional variations, and their voices are therefore given prominence in the empirical analyses in the main chapters. The material's limitations are adjusted for in critical side-by-side readings of the reports and examples representative of the inspectors as a group. A range of other sources provided statistical information, as mentioned above. By using these additional sources, I sought to present broader information about the dissemination of wall charts in the Swedish context than only the inspectors' views of their implementation, acceptance, and usefulness.

The role of the school inspection in educational change

In 1861, 20 part-time inspectors were responsible for monitoring several inspection districts in Sweden; by 1910 that number had increased to 47, and 13 listed inspection as their main occupation. Inspectors were to exercise their duties following instructions issued by the Department for Ecclesiastical Affairs (*Ecklesiastikdepartementet*), which included carefully monitoring the development of education, visiting the schools in person, and becoming familiar with their conditions and needs.²⁷ For church and clergy, inspection was nothing new, as it had been part of traditional education. As Egil Johansson argues, it would probably have been impossible to create a completely new and secularised school inspection without the existing ecclesiastical structure.²⁸ The inspection districts therefore followed the Lutheran state church structure of dioceses, divided in turn into deaneries. Local parish churches continued to be responsible for schools' administration, with vicars serving exclusively as chairmen of local school boards until 1930, after which they were still eligible to be elected to that position. The only central authority was the Elementary School Bureau, created in 1864 within the Ministry of Ecclesiastical Affairs, which oversaw administration and pedagogy and assisted the secretary of the ministry. Regional civic county councils had already been created in 1862 following a reform dividing roles in parish roles into civic and ecclesiastical spheres, with boards responsible for elementary school matters such as teacher education.²⁹ The county councils contributed to

25 Johannes Westberg, *Att bygga ett skolväsende: Folkskolans förutsättningar och framväxt 1840–1900* (Lund: Nordic Academic Press, 2014), 115–6.

26 Inspection reports as sources have been problematised in Margareta Mellberg, *Pedagogen och det skrivna ordet: Skrivkonst och folkskollärare i Sverige 1870–1920* (Gothenburg: Gothenburg University, 1996), 75–76.

27 Kongl. Maj:t nådiga instruktion för folkskoleinspektörer 15 juni 1861.

28 Egil Johansson, "Mindre än minimum: Den gamla hemläsningen och föräldrarnas ambitioner för barnen i ljust av folkskoleinspektörernas berättelser 1861–68," *Forskning om utbildning* 18, no. 4 (1991), 28.

29 Lennart Tegborg, *Folkskolans sekularisering 1895–1909: Upplösning av det administrativa sambandet mellan folkskola och kyrka i Sverige* (Stockholm: årsböcker i svensk undervisningshistoria, 1969), 17–20; Olof Wennäs, "Skolans styrning genom tiderna: En översikt," in *Utbildningshistoria 1998*, ed. Stig G Nordström and Gunnar Richardson (Uppsala: föreningen för svensk undervisningshistoria, 1998), 21–25.

funding school inspections and were therefore also important in the development of the institution, particularly in its infancy.³⁰

The continued involvement of the church was also evident in the recruitment of inspectors. In 1861, 19 inspectors were hired: 8 clergymen, 6 grammar school teachers, 2 teachers of elementary school seminars, 1 notary public, 1 member of the military, and 1 elementary school teacher. Perhaps surprisingly, the proportion of clergymen remained almost the same in 1910. Of 47 inspectors hired, there were 22 clergymen, 8 teachers of elementary school seminars, 3 folk high school teachers, 1 grammar school teacher, and – notably – 13 with no other occupation.³¹ Because the bishop proposed the candidates, which helped the church to maintain influence over schools, clergymen were often preferred as school inspectors. While some dioceses favoured grammar school teachers for practical roles and others recruited clergymen with teaching credits,³² all candidates required some sort of background from the school. Torbjörn Nilsson showed that school inspectors' general tasks were very similar in the early twentieth century to those in the 1860s: to monitor schools and give advice. Inspectors were perceived to occupy an upper stratum of teaching, but they were still undergoing the professionalisation from a part-time occupation begun only in 1914.³³ They also regularly met as a group in the late nineteenth century to strengthen their own profession. National inspector meetings were held with the Minister of Ecclesiastical Affairs in Stockholm to discuss various aspects of school development, resulting in common statements that acted as additional guidelines for the inspectors' work.³⁴

Schools to be inspected were regular elementary schools (*egentliga folkskolor*), junior schools (*småskolor*; introduced in 1858 for younger children), and minor elementary schools (*mindre folkskolor*), which were introduced in 1853 and functioned as a complement to the regular elementary school. Several ambulatory schools continued to exist in each of these categories throughout the period, although they decreased over time. Initially, the latter two types of school did not require teachers to be examined. Teachers needed only some general skills verified by the reverend and school board. In fact, one of the first main assignments of school inspectors was to make sure suitable teachers were hired at junior and minor schools and see that their education was improved. Later state subsidy reforms in the 1870s and 1880s provided more funding to schools that hired examined teachers. Altogether, these incentives gradually led to more teachers receiving formal training.³⁵

30 Östen Persson, "Några anteckningar om den statliga regionala skolinspektionen," in *Skolinspektörer minns*, ed. Bengt Thelin (Uppsala: Föreningen för svensk undervisningshistoria, 1994), 16–17.

31 J. Franzén, "Historik över folkskoleinspektionen i Sverige," *Folkundervisningens betänkande III angående förändrad anordning av folkskoleinspektionen avgivet den 31 januari 1913* (Stockholm: P.A. Norstedt, 1913), 135, 217.

32 Josef Gralén, *Folkskoleinspektionen i Örebro län: åren 1861–1914 jämte kortfattad översikt av folkundervisningen i länet före 1861* (Stockholm: Föreningen för svensk undervisningshistoria, 1958), 93.

33 Torbjörn Nilsson, *Mellan Rådgivning och kontroll: Den statliga skolinspektionen som exempel* (Stockholm: Södertörns högskola, 2018), 31, 37.

34 Such meetings were held in 1862, 1864, 1867, 1870, 1877, 1881 and 1894. National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, F5B:2–4, "Protokoll vid folkskoleinspektörernas möten."

35 Sven Nylund, *Småskolläroarbetsutbildningen i Sverige* (Stockholm: Svenska kyrkans diakonistyrelses

Besides teacher development, another pedagogic reform was the implementation of teaching materials in the local schools. Teaching materials, including wall charts, formed a main area of inspectors' teaching instruction and they therefore monitored the development of new materials and influenced school boards to purchase them.³⁶ As will be shown, wall charts were a priority for the collective of inspectors in the late nineteenth century. Inspectors themselves were very active in developing and producing teaching materials such as textbooks and participated in the pedagogic debate. Wilhelm Norlén (1826–1896), for example, who was inspector in the diocese of Uppsala from 1872 to 1878 authored a long-lasting textbook for teaching Swedish. Another notable inspector in the diocese, Fredrik Sandberg, wrote textbooks on various school subjects. He was also behind the import and production of the first biblical wall charts based on images from Germany made exclusively for pedagogics.³⁷ In the early 1870s, Sandberg produced a collection of wall charts, *Images for the School and Home* (Bildrark för skolan och hemmet), which gained wide popularity for visual teaching in younger children. Inspectors were also internationally active in the area of school wall charts. Sandberg, for example, was responsible for a school exhibition in 1872 in Moscow, where he attempted to spread his own natural science wall charts internationally.³⁸

Early efforts and increasing disseminating of wall charts, 1861–1880

During the latter part of the nineteenth century, picture lessons gained popularity around the world. As Sarah Anne Carter pointed out, these images did not merely replace objects in teaching, but also organised abstract information about the material world in a new way. Lithographs were then seen in pedagogy both as “material things and as tools for discerning elusive qualities or aspects of daily life, whether related to moral behavior, the natural world or labor.”³⁹ Classroom wall charts had their heyday from the late nineteenth century until the early twentieth century, facilitated by the new method of classroom teaching and resulting in all western countries adopting the same basic classroom design consisting of desks, blackboards, writing utensils, and pictures on the walls.⁴⁰ In Sweden, monitorial teaching was formally abolished in 1864, making way for teacher-led lessons as the norm. As Agneta Linné points out, this reform led to more structured lesson plans in which new teaching technologies replaced older ones.⁴¹ As early as 1856, however, Per Adam Siljeström,

bokförlag, 1942), 30–32, 43–44; Johannes Westberg, “Stimulus or Impediment: The Impact of Matching Grants on the Funding of Elementary Schools in Sweden During the Nineteenth Century,” *History of Education* 42, no. 1 (2013), 20.

36 Kongl. Maj:t nådiga instruktion för folkskoleinspektörer 15 juni 1861.

37 Evertsson (2014), 673.

38 Lena Johannesson (ed.), “Skolplanschen och åskådningsundervisningen—den förbisedda läromedelstraditionen,” *Om skolplanschsamlingen och skolmuseet i gamla Linköping* (Linköping: Linköping University, 1996), 10, 16, 34.

39 Sarah Anne Carter, *Object Lessons: How Nineteenth-Century Americans Learned to Make Sense of the Material World* (Oxford: OUP, 2018), 4.

40 Jacques Dane, Sarah-Jane Earle, and Tijs Van Ruiten, “The Material Classroom,” in *The Black Box of Schooling: A Cultural History of the Classroom*, ed. Sjaak Braster, Ian Grosvenor, and Maria del Mar del Pozo Andrés (Brussels: Peter Lang, 2011), 266–69.

41 Agneta Linné, “The Lesson as a Pedagogic Text: A Case Study of Lesson Designs,” *Journal of Curriculum Studies* 33, no 2 (2001), 131–33.

later appointed school inspector in Stockholm, had argued to include wall charts in teaching as a complement to textbooks, thus influencing later developments.⁴²

This section investigates the dissemination of wall charts during the first two decades of school inspections. This period saw an increased interest in visual materials, and by the end of the period a canon of recommended wall charts had been established. School inspectors, first hired in 1861, were tasked with evaluating (among other things) the teaching materials and summarising their findings in a comprehensive report. Because these reports reveal the official view of ongoing developments in the school, they provide important documentary evidence of teaching materials in the different school districts in that era.⁴³ The implementation of teaching materials such as wall charts, however, was initially slow, as pointed out at the first national inspector meeting in 1862.⁴⁴ An allowance of 10,000 kronor was therefore introduced that year to offset their production costs and reduce the prices of teaching materials requisitioned by the state.⁴⁵ The earliest wall charts, intended for teaching Christianity, were lithographs of religious paintings and wall maps of Palestine. Still, from 1864 to 1865 as much as 27 per cent of the state's subsidies for teaching materials went to biblical wall charts, which is perhaps remarkable given that the other materials supported that year were books.⁴⁶ Soon, however, even more wall charts were included in this list and broadened the schools' material base.

In European countries such as Germany, wall charts became standard in public schools from the last third of the nineteenth century into the first third of the twentieth. Still, as Elisabeth Erdmann noted, studies on the materials available at the time are scarce.⁴⁷ In Sweden, there are no detailed statistics on the number of wall charts in the inspector reports during the first two decades (the 1860s and 1870s), but we may draw conclusions from the descriptions in the reports. In the diocese of Uppsala, wall charts in the "above minimum" subjects were mentioned only rarely in the first inspection reports. One inspector reported that only some maps distributed by the state were available for visual teaching in geography.⁴⁸ In another district, teaching materials were reported to be better in the cities, but otherwise only the most necessary materials such as books, maps, and wall charts were available. One reason for the shortage of materials in schools was their cost.⁴⁹ Urban centres were often the first to purchase substantial collections of wall charts, as demonstrated in

42 Per Adam Siljeström, *Inledning till skolarkitekturen* (Stockholm: P.A. Norstedt & Söner, 1856), 103–4.

43 Jonsson (2006), 83.

44 National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, F5B:2, Handlingar angående folkskoleinspektionen, 1861–1907, Protokoll hållet vid Folkskole-Inspektörernas möte i Stockholm 1862, § 7 (Hereafter, PFIM).

45 Anna Sörensen, *Svenska folkskolans historia 3: det svenska folkundervisningsväsendet 1860–1900* (Stockholm: Albert Bonniers förlag, 1942), 452–53.

46 National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, F5B:9, "Cassabok för åren 1864–1880, Öfversikt af utgifter för undervisningsmateriel."

47 Elisabeth Erdmann, "The Functionalization of History and Social Studies Education in Germany from the 19th Century Until Today," *History of Education & Children's Literature* 10, no. 1 (2015), 563.

48 Berättelser om folkskolorna i riket afgifna af tillförordnade folkskoleinspektörer (Stockholm: Nordiska bokh., 1861–63), 8. (Hereafter BSFR)

49 BSFR (1861–63), 23–24.

England.⁵⁰ This was also true of Sweden in the early 1860s. The national inspector meeting in Stockholm therefore decided that the state should help to provide more schools with suitable wall charts in the “above minimum” subjects.⁵¹ After the next inspection rounds (1864–1866) one inspector reported that visual materials for natural sciences “very rarely existed.”⁵² Another pointed out that geography teaching had been much improved by recently acquired maps and globes. However, such materials were lacking for the natural sciences.⁵³ Generally, it appears that maps for teaching geography were the main focus in the 1860s.⁵⁴ This led the national inspector meeting to recommend that the state make available wall charts for natural science and geometry. The standard recommended set of wall included maps of Scandinavia, Europe, and the world and charts about biblical history and natural science. Interestingly, teachers themselves were encouraged to acquire or even produce wall charts for the classroom.⁵⁵ Teaching materials were promoted through expositions as well as school meetings, with Sweden winning the silver medal at the international educational exhibition in Paris in 1867 for a school maps display, described as having good quality characteristic of a modern education.⁵⁶

50 Ian Grosvenor, “‘To Act on the Minds of the Children’: Paintings into Schools and English Education,” in *The Black Box of Schooling: A Cultural History of the Classroom*, ed. Sjaak Braster, Ian Grosvenor, and María del Mar del Pozo Andrés (Brussels: Peter Lang, 2011), 42–3.

51 PFIM (1862), § 7.

52 BSFR (1864–66), 14.

53 BSFR (1864–66), 47.

54 See BSFR (1864–66), 80–81; BSFR (1864–66), 96–97; BSFR (1864–66), 107; BSFR (1864–66), 119; BSFR (1864–66), 141.

55 PFIM (1864), § 10.

56 Christian Lundahl and Martin Lawn, “The Swedish Schoolhouse: A Case Study in Transnational Influences in Education at the 1870s world fairs,” *Paedagogica Historica* 51, no. 3 (2015), 324.



Figure 2. "Wall map of Sweden and Norway" from 1870
Source: "Väggkarta över Sverige och Norge," T.v. Mentzer, Sigfrid Flodins förlag: Stockholm.

The pedagogical use of wall charts in lessons emerged only gradually in Sweden and the other Nordic countries. In Denmark, for example, wall charts were available in many schools by the 1870s, but only in the following decade were they used as proper teaching aids. Their function was not merely to demonstrate facts, but also to instill

ideals in the children.⁵⁷ In the diocese of Uppsala, Inspector Norborg mentioned that geography teaching improved as maps became available everywhere in the district.⁵⁸ Maps were also credited with contributing to children's enjoyment of studying,⁵⁹ and one inspector reported that schools had recently been provided with excellent teaching materials including good maps.⁶⁰ Wall charts for history were rarely mentioned since history was often taught with geography, but presumably some of the geography maps were also used to teach history. Visual teaching materials in geometry, however, were often missing according to Norberg, making it difficult to demonstrate figures in class. Schools that had purchased wall charts for this subject were reported to have made it more interesting.⁶¹ Another inspector, Dahlström, had found that stereometric figures (geometry) and maps had also become more generally available in his district.⁶² Not until the late nineteenth century was geometry taught more generally in Swedish elementary schools. Wall charts were important, as Sverker Lundin pointed out, in focusing more on practical and "vivid" teaching rather than difficult abstractions and mechanic rules that were not adapted to children's understanding.⁶³ The inclusion of stereometric figures on the short list of state-subsidised teaching material provided to schools in 1866 was therefore logical and led to several schools in the Uppsala diocese ordering this material.⁶⁴

With the growing implementation of the "above minimum" subjects, demand for better teaching materials, especially wall charts, increased.⁶⁵ Lists of recommended materials based on the inspector reports were published regularly to guide local schools. In particular, the *Reader for the Elementary School*, published in 1868, functioned as a catalyst for the use of visual materials even though it was essentially a textbook.⁶⁶ The first edition contained 30 woodcut images particularly related to history, geography, and natural science.⁶⁷ Mass-produced readers used across Europe functioned not only as reading practice, but also to transmit patriotic and moral ideals, mainly through the subjects of history and geography.⁶⁸ A reader in natural

57 Anne Katrin Gjerløff and Anette Faye Jacobsen, *Dansk skolehistorie 3: Da skolen blev sat i system 1850–1920* (Aarhus: Aarhus Universitetsforlag, 2014), 283–86.

58 BSFR (1867–68), 23.

59 *Ibid.*, 72.

60 *Ibid.*, 56.

61 *Ibid.*, 23.

62 *Ibid.*, 37. For maps, see also BSFR (1867–68), 46, and for stereometric figures, see BSFR (1867–68), 78.

63 Sverker Lundin, *Skolans matematik: En kritisk analys av den svenska skolmatematikens förhistoria, uppkomst och utveckling* (Uppsala: Uppsala University, 2008), 257, 290–91.

64 National Archives, Uppsala, Uppsala chapter, G4B:1, Requisitioner af undervisningsmaterial för folkskolorna enligt domkapitlets cirkulär år 1866, no. 5 § 2.

65 From 1862 to 1885, the proportions of children taught increased from 9 % to 48 % in history and from 10 % to 79 % in geography. Jakob Evertsson, "History, Nation and School Inspections: The Introduction of Citizenship Education in Elementary Schools in Late Nineteenth-Century Sweden," *History of Education* 44, no. 3 (2015), 264.

66 PFIM 1867, § 19.

67 *Läsebok för folkskolan: faksimilieutgåva efter första upplagan 1868* (Stockholm: Gidlund, 1979).

68 Susannah Wright, "Citizenship, Moral Education and the English Elementary School," in *Mass Education and the Limits of State Building, c. 1870–1930*, ed. Laurence Brockliss and Nicola Sheldon (New York: Palgrave, 2012), 27.

science including 60 wood cuts had also been published in 1852 and was distributed with the main *Reader*.⁶⁹ As Magnus Hultén points out, this science book seems to have been rather unknown in the early 1860s; inspectors made almost no mention of it, but it soon became a standard and was printed in many subsequent editions.⁷⁰ These two readers were the standard as evidenced by consistent orders from the parish boards throughout the late nineteenth century.⁷¹ The two teaching technologies of books and separate visual aids did not mutually exclude each other. Instead, wall charts in natural science, for example, often functioned in close interaction with and as a complement to the textbooks, as has been shown in international research⁷² and by the demands of Swedish inspectors that textbook images ought to be printed out as wall charts.⁷³ Still, in the late nineteenth century the connection between book illustrations and wall charts gradually dissolved, and wall charts were accorded the status of independent materials complementary to textbooks, but with their own didactic methods.⁷⁴ For example, thematic wall maps were introduced in Sweden during this time as a pedagogical instrument to teach children about the “fatherland” and to instil patriotic feelings.⁷⁵

Table 1. Teaching material spending in Swedish schools 1868–1882

Year	Teaching material costs (kronor)	
	Uppsala diocese	Nationally
1868	17,054	138,876
1882	22,704	223,138

Source: *Bidrag till Sveriges officiella statistik* (Contributions to Sweden’s Official Statistics), 1868–1882.

The school board’s willingness to spend money on teaching materials was obviously important in the dissemination of wall charts. Table 1 shows that the spending in Uppsala diocese between 1868 and 1882 followed the trend of national school funding, increasing from 17,054 to 22,704 kronor. However, the national increase was even greater, rising from 138,876 to 223,138 kronor. Uppsala’s average spending was well above that of other dioceses. The average cost for teaching materials was 10,682 kronor in 1868 and 17,006 kronor in 1882, but there were large variations

69 Nils Johan Berlin, *Lärobok i naturläran för folkskolor och folkskollärare-seminarier*, första upplagan (Lund: Gleerups, 1852).

70 Magnus Hultén, “Scientists, Teachers and the ‘Scientific Textbook’: Interprofessional Relations and the Modernisation of Elementary Science Textbooks in Nineteenth-Century Sweden,” *History of Education* 45, no. 2 (2016), 164–66.

71 National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, F5B:9–10, Räkenskaper för anskaffning och utdelning av undervisningsmaterial 1877–1903.

72 Michael Markert et al., “Staging Nature in Twentieth-Century Teacher Education and Classrooms,” *Paedagogica Historica* 56, no. 1–2 (2020), 134.

73 PFIM 1867, § 19.

74 Walter Müller, “Schulwandbilder als Quellen schul- und bildungshistorischer Forschung,” in *Bilder als Quellen der Erziehungsgeschichte*, ed. Hanno Schmitt, Jörg-W. Link, and Frank Tosch (Bad Heilsbrunn: Verlag Julius Klinkhardt, 1997), 192.

75 Mattias Legné, “Bilder av Norden från 1500 till 1900,” *Landet under dina ögon: kartutställning på Kungl. Biblioteket. 15 juni to 15 oktober 2006* (Stockholm: Kungl. Biblioteket, 2006), 25.

between the dioceses depending on their sizes and number of schools.⁷⁶ Interestingly, a higher percentage of funds were set aside for teaching materials in Uppsala in 1868 (12 per cent) than in 1882 (10 per cent). The lack of substantially increased spending on teaching materials in 1882, also visible at the national level, can be partly explained by the durability and usefulness of the wall charts: once obtained for a particular subject, they were used for a long time and were often adapted to teach other subjects, which then required only supplementary materials in addition. In the early period, cheaper imported wall charts dominated, while in the late nineteenth century, domestic wall charts (to be discussed later) became more prominent. An important factor in the total expenditures was the substantial increase in schools during this period, which needed both new buildings and more teachers.

The annual state allowance of 10,000 kronor contributed to the production of teaching materials and offset some costs for the parishes. Here we can also identify how much went to the funding of wall charts. In 1868, the state spent 15,457 kronor on teaching materials, and 15 per cent (2,291 kronor) of this was set aside for wall charts in history, geography, natural science, and geometry. In 1872, 82 per cent (9,154 of the total 11,150 kronor available) was spent on wall charts in these four subjects, which quickly brought about significant change by providing more visual materials for the “above minimum” subjects. Five years later, however, only 13 per cent of the allowance (1,241 of 9,499 kronor) was used for that purpose, indicating that the previous strong support was related to the state’s temporary effort to introduce newly acquired wall charts. In the entire period of 1864–1880, only 17 per cent (32,132 kronor of 192,266) of the allowance was assigned to wall charts for the “above minimum” subjects.⁷⁷

Monetary allowances were not the only state contributions to the purchase of wall charts for local schools. Official lists of recommended teaching materials, issued by the state based on recommendations from the school inspectors, were available for order at a discounted price. In 1872, for example, besides the *Reader*, school boards were advised to purchase wall maps of Sweden, Europe, and the world; political wall maps of Sweden and Norway; and wall charts of coins, measures, weights, and the animal kingdom. Wall charts could be rather expensive: the *Reader* cost 1 *riksdaler*, and a chart of measures and weights as much as 4 *riksdaler*.⁷⁸ School inspectors also occasionally complained about teachers’ inability to use the material to suit the children’s learning needs. Teacher manuals for the methodical use of the wall charts were therefore produced by the Elementary School Bureau (*Folkskolebyrån*).⁷⁹ The price of wall charts and the lack of manuals were also initial problems in other countries such as Spain and delayed the dissemination and implementation of wall charts as pedagogical tools.⁸⁰ In Sweden, natural science was even characterised as a “stranger” in elementary school teaching in the 1870s due to the lack of good teaching materials and the unsophisticated pedagogical practices in the classroom.⁸¹

76 BISOS (1868), Bilagor, 67; BISOS (1882), table 8.

77 “Cassabok för åren 1864–1880.”

78 National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, B3AA, “Förteckning på undervisningsmateriel för folkskolorna,” cirkulär no: 30 (1872), Cirkulär m.m. angående folkundervisningen i riket.

79 PFIM 1870, §15.

80 Mar del Pozo Andrés (2013), 11.

81 Henrik Edgren, “‘En främling i den svenska folkskolan’: 1870-talets folkskoleundervisning i naturkunnighet,” in *Sann opplysning? Naturvitenskap i nordiske offentligheter gjennom fire århundrer*,

Inspectors' efforts to disseminate wall charts in the local schools and encourage them to use teacher guidelines bore fruit after some time, although this should be attributed not only to inspectors, but also to the local school boards' willingness to invest in the necessary structures. Local taxation and state subsidies were the main sources of income for the schools, but in 1871 the subsidies were changed from a complicated system based on population size to a matching grant system, which increased them. As Johannes Westberg showed for the Sundsvall region in the north of Sweden, however, local school districts in 1865–1900 continued to be an important source of funds for Swedish schools, providing 61 to 69 per cent of their income.⁸² It is therefore important not to exaggerate the state's financial influence in the dissemination of wall charts. Still, in the early 1870s, Inspector Thorman mentioned that the increasing use of maps in local schools had actually been detrimental to learning, saying that if the map were removed from a pupil's line of sight, then "rapidly vanishes almost all his geographic knowledge."⁸³ These large-format and often lively pictures impressed the children at the time, as has been argued by Walter Müller in the German case.⁸⁴ Given the importance of visual teaching, it was therefore seen as a problem that wall charts in natural sciences were still lacking in most schools, although more were purchased for schools than previously.⁸⁵ The observation of one inspector that it was "sad to find, how hasty the teaching material was worn out,"⁸⁶ illustrates how common and expected wall charts had become in some subjects. Geography remained important in the inspectors' reports, and in some districts the schools even wanted to renew the maps and purchase new ones. Stereometric figures for geometry and wall charts for natural sciences also seem to have become more common in some districts.⁸⁷ Inspector Roos even found that materials for "the study of geography and natural science [have] been abundantly provided for in many schools."⁸⁸ Later in the decade, apart from the now commonly used geographical maps, wall charts for topics in natural science such as the animal kingdom and the human body had spread to many more schools.⁸⁹

ed. Marethe Roos and Johan Tønnesson (Oslo: Cappelen Damm akademisk, 2017), 233.

82 Johannes Westberg, *Funding the Rise of Mass Schooling: The Social, Economic and Cultural History of School Finance in Sweden, 1840–1900* (Cham: Palgrave MacMillan, 2017), 144–47.

83 BSFR (1869–71), 16.

84 Müller (1997), 213.

85 BSFR (1869–71), 17.

86 *Ibid.*, 20.

87 BSFR (1869–71), 43, 47; BSFR (1869–71), 68–69. See also BSFR (1872–76), 86.

88 BSFR (1869–71), 92.

89 BSFR (1872–76), 17; BSFR (1872–76), 86; BSFR (1872–76), 105; BSFR (1872–76), 132–34.

Table 2. Sets of standard wall charts purchased from the state by local schools in Sweden, 1874–1883

Subject	Standard sets of wall charts	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883
History	Swedish kings	222	161	124	136	61	50	42	22	20	28
	Political map of Sweden and Norway	372	414	402	436	458	404	335	299	268	328
Geography	Map of Sweden	212	166	169	131	147	91	81	91	107	112
	Map of Europe	239	193	301	374	218	182	168	147	168	222
	Map of the globe	199	190	306	293	205	179	118	148	160	165
Natural science	Human body	270	246	261	217	221	203	193	187	196	233
	Animal kingdom	267	236	175	185	175	135	149	155	149	166
Geometry	Measures and weights	138	152	161	53	64	29		120	208	155
	Metric measures							419	346	196	196

Source: Data collected by the author. Based on *Räkenskaper för anskaffning och utdelning av undervisningsmaterial 1874–1903* (Accounts of the Acquisition and Distribution of Teaching Materials 1874–1903), National Archives, Department of Ecclesiastical Affairs, Main Archives F5B:9–10, Stockholm.

The table above shows the number of sets of wall charts in “above minimum” subjects sent to Swedish parishes from 1874 to 1883. These constituted the standard set of wall charts within the “above minimum” subjects, but there were others available in the ever growing lists of available material.⁹⁰ During this decade, a substantial amount of wall charts in these subjects were distributed at a discounted price, given that the number of schools was 9,621 in 1882.⁹¹ The totals ordered during this period were 4,582 in history, 5,482 in geography, 4,019 in natural science, and 2,237 in geometry.⁹² Metric measures were first introduced in geometry charts in 1880, but are included here as they constituted an important material in the subject. As noted, the numbers of purchases did not increase year by year, but peaked in certain years. One important reason for these changing numbers was the promotion of specific materials through the lists of recommended materials; another was that inspectors actively sought to evenly distribute the implementation of wall charts. Finally, schools in various parts of Sweden built up their visual materials gradually and only bought new wall charts when necessary. Although promoted by the state, some materials such as wall charts about the Swedish kings also went out of fashion. The table shows this trend in the decrease in orders from 222 in 1874 to only 28 in 1883. After 1883, the ordering pattern changed. As new materials were produced and introduced, wall

90 National Archives, Department of Ecclesiastical Affairs, Main Archives, B3AA, “Förteckning på undervisningsmateriel för folkskolorna,” Cirkulär no. 40 (1875), Cirkulär m.m. angående folkundervisningen i riket.

91 BISOS (1882), 20.

92 The political wall chart of Sweden has been counted as history although it was probably used for teaching both history and geography.

charts on metric measures and the animal kingdom were the only older charts that continued to be requested.

Although inspectors were satisfied with the frequent use of these new teaching materials, they sometimes wanted teachers to pay more attention to their preservation, perhaps indicating their aversion to replacing older materials.⁹³ At the national inspector meeting, they agreed that “one has to admit that frequently an inability among senior teachers is revealed on how to use this material in an appropriate manner,” indicating that pedagogical measures did not always go hand in hand with the wall charts.⁹⁴ Around this time several wall charts were replaced on the state’s list of recommended teaching materials, as seen in the table, which perhaps was necessary given the state of older wall charts in the parishes. Of the 19 wall charts available in Uppsala diocese in 1875, 13 were on geography, history, geometry, or natural science, demonstrating the increasing importance of these subjects in the 1870s.⁹⁵ The growing importance of those wall charts is also shown by the increase in local materials requisitions from 1866 to 1876. In 1866, 43 of the 73 wall charts ordered were on geography; in 1876, 152 of 287 wall charts requisitioned were on the “above minimum” subjects.⁹⁶ While requisition lists initially varied from year to year depending on the materials being promoted, the mid-1870s saw the establishment of a canon of standard wall charts that continued in use for some decades. At the national inspector meeting in 1877, it was reported that most elementary schools had wall charts on the Swedish kings, the animal kingdom, and the human body and political and geographic maps of Scandinavia, Europe, and the world.⁹⁷ One school inspector in Uppsala diocese graded the available materials in a school “good” if all they included all of these wall charts.⁹⁸ Notable for its exclusion from the list the chart of the Swedish kings, which never achieved the same prominence as the others. This set, along with biblical wall charts and readers, came to constitute the standard visual materials provided to schools at discounted price by the state.

The general availability of wall charts and calls for improvement: 1880–1910

As discussed, wall charts were gradually disseminated from the 1860s aided by the inspectors’ recommendations and state subsidies that influenced local school districts’ purchases of teaching materials for the schools. Bible images were the first to be implemented, followed initially by wall maps for teaching geography and history, while materials in natural science and geometry were largely absent until the 1870s. Massimiano Bucchi has described 1870–1920 as the “golden age” of the use of visual aids in didactic communication and the height of the production and sale of large-format wall charts. Initially, these were limited to German-speaking countries,

93 BSFR (1872–76), 42.

94 PFIM (1877), § 16.

95 National Archives, Uppsala, Uppsala chapter, G4B:3, “Lista för requisition af undervisningsmateriel för folkskolorna,” 1875.

96 National Archives, Uppsala, Uppsala chapter, G4B:1–3, “Lista för requisition af undervisningsmateriel för folkskolorna,” 1866, 1876.

97 PFIM 1877, §16.

98 BSFR (1872–76), 105.

but they soon spread to other European countries.⁹⁹ This chapter investigates the different mechanisms of disseminating wall charts in the Swedish context in the late nineteenth and early twentieth centuries. During this period, wall charts were implemented in all the “above minimum” subjects in Sweden, although this varied between districts and subjects. The established canon of standard wall charts facilitated the continued dissemination of these materials from the 1880s onwards, and international imports were increasingly replaced by the domestic production achieved towards the end of the nineteenth century.

By the 1880s, Sweden had introduced a national curriculum (1878) and a more comprehensive list of recommended teaching materials than in 1875. Of the 34 materials recommended, 17 were wall charts and the rest were textbooks and physical objects.¹⁰⁰ In 1880, 22 of 40 items were wall charts, demonstrating the rapid increase in the visual materials and other teaching tools available.¹⁰¹ Sarah Anne Carter suggested that one reason for the emphasis on images over other study materials was that they offered an alternative way to organise abstract information about the material world.¹⁰² Inspectors considered the wall charts in geography important because in this respect they, like the readers, also benefitted other theoretical subjects. Inspector Laurell, for example, confirmed that geography was better taught than any other subject in the elementary schools because “apart from the subject’s nature of variation... it borders on and partly takes in both history and the natural sciences [through] the general availability and use of the visual material, such as maps and globes...”¹⁰³ However, the distribution of wall charts in different subjects could still vary between parishes. Laurell pointed out the lack of charts of the Swedish kings in Uppsala, while maps of Sweden and Europe were generally available. Maps of the world and charts on measures and weights, the human body, and the animal kingdom were also common in the schools, while the natural sciences seem to have been less well provided for than other subjects.¹⁰⁴ This demonstrates that while state recommended materials were actively disseminated during this period, there were differences among school subjects and parishes.

99 Bucchi (1998), 163.

100 National Archives, Department of Ecclesiastical Affairs, Main Archive, B3AA, “Förteckning på undervisningsmateriel för folkskolorna,” (1877), Cirkulär m.m. angående folkundervisningen i riket.

101 National Archives, Uppsala, Uppsala chapter, G4B:3, “Förteckning på undervisningsmateriel för folkskolorna,” (1880), Cirkulär m.m. angående folkundervisningen i riket.

102 Carter (2018), 68–69.

103 BSFR (1877–81), 12.

104 *Ibid.*, 17.



Figure 3. “Wall chart of the Animal Kingdom” from the 1880s.
Source: ”Väggtaflor öfver Djurriket. Serien I. Däggdjur,” N.J. Gumperts förlag: Gothenburg.

In another district, the inspector considered that wall maps were used appropriately by most schools to teach geography. This was also the case for natural sciences, with teaching now mainly relying on wall charts of the human body and the animal kingdom (see Figure 3 above). Inspector Ekman claimed that the need for such materials grew constantly, but that schools had not yet realised their importance¹⁰⁵ or were unwilling to pay for them¹⁰⁶ as the state’s 1881 list of materials shows that wall charts were more expensive than other teaching materials. Wall charts of the animal kingdom came in a set of 10 images for 25 kronor, which was very expensive compared with a set of 20 biblical wall charts costing only 5 kronor.¹⁰⁷ Other

105 Ibid., 78–79. For geography, see also, 154.

106 Ibid., 111.

107 National Archives, Department of Ecclesiastical Affairs, Main Archive, B3AA, “Förteckning på

inspectors pointed out that school councils were generally willing to purchase the necessary materials, although not as frequently as they should.¹⁰⁸ In some districts only a few schools lacked the most necessary teaching materials, demonstrating the widespread dissemination of wall charts.¹⁰⁹ As Müller showed, wall charts became a mandatory teaching material in the late nineteenth century in Germany and elsewhere in Europe, as is evident in recommendations for teaching materials and school inventory lists.¹¹⁰ The lists of material acquisitions from local school districts in Uppsala diocese in 1880 are notable in that readers were the most prioritised teaching material, but wall charts had also gained more prominence.¹¹¹ The apparent pedagogical implications of having inspected the availability and use of wall charts continued for nearly two decades. At the national inspector meeting in 1881, the use of visual materials was now described in three stages from the most elementary to the most advanced. The inspectors also called upon the state to provide schools with newer materials for history, geography, and natural science, and the Department of Ecclesiastical Affairs followed those recommendations.¹¹² The renewed elementary school statute of 1882 also stated that “necessary teaching material” should be made available by each school district.¹¹³

Table 3. Number of schools with standard wall charts in Hagunda and other deaneries, 1881 and 1892

Subject	Standard wall charts	1881		1892	
History	Swedish kings	32	(14%)	37	(13%)
	Political map of Sweden and Norway	165	(71%)	198	(68%)
Geography	Map of Sweden	25	(11%)	50	(17%)
	Map of Europe	144	(61%)	180	(62%)
	Map of the globe	71	(31%)	139	(48%)
Natural science	Human body	51	(22%)	137	(47%)
	Animal kingdom	65	(28%)	97	(35%)
Geometry	Measures and weights	12	(5%)	55	(19%)
	Metric measures	6	(3%)	88	(30%)

Source: Data collected by the author. Based on information in *Berättelser om folkskolorna i riket afgifna af tillförordnade folkskoleinspektörer* (Stories About Elementary Schools in the Kingdom Told by Acting Elementary School Inspectors; BSFR) in Hagunda and other deaneries (1887–92), 33–34, 50–51. Note: Percentage in parenthesis indicates the proportion of wall charts available in all Hagunda schools.

undervisningsmaterial för folkskolorna,” (1881), Cirkulär m.m. angående folkundervisningen i riket.

108 BSFR (1877–81), 92.

109 Ibid., 119.

110 Müller (1997), 212.

111 National Archives, Uppsala, Uppsala chapter, G4B:3, ”Requisition å skolmaterial från Kongl. Ecklesiastik-Departementet in 1880,” Närtuna och Gottröra församlingar.

112 PFIM 1881, § 11.

113 SFS 1882:8, Kongl. Maj:t förnyade stadga angående folkundervisningen i riket; gifven Stockholms slott den 20 januari 1882, § 52.

Hagunda, as the only inspector district of the six in the diocese of Uppsala to provide detailed statistics for 1881–1892 on the number of schools with wall charts in the “above minimum” subjects, is particularly interesting. It was also one of the largest districts in population and number of schools, and it included both urban and rural areas. Comparable data for the number of wall charts in schools is available only for this specific period. Various new wall charts had also come into the schools by 1890, thus somewhat complicating between-year comparisons. Schools in Hagunda had 1,240 wall maps and wall charts in 1881, of which 797 were in the “above minimum” subjects. By 1892 that number had almost doubled to 2,413 of which 1,574 were in those subjects. This demonstrates the growing interest in visual materials as the number of schools only rose from 233 to 290 during the same period. However, the numbers do not speak for a linear growth in wall charts and maps over time (see Table 3). For example, with the exception of the 17 per cent increase in world maps, the percentage of schools with wall charts in history and geography remained rather stable during this period. A larger proportion of schools had political rather than other types of wall maps of Sweden, suggesting they were probably used for both history and geography. Wall charts for natural science and geometry, however, increased more substantially. Schools with charts of the human body increased from 22 to 47 per cent, with charts of measures and weight from 5 per cent to 19 per cent, and with metric tables from a mere 3 per cent to 30 per cent during this period.¹¹⁴ Here, it should be mentioned that wall charts were generally more available in the normal elementary schools than in the other schools. In 1898, although he did not provide exact numbers, Inspector Hermansson reported that the wall charts mentioned in the table were available in most normal elementary schools, indicating the subsequent dissemination of these materials.¹¹⁵

There were similarities and differences among inspection districts during this period. Wall charts seem to have been more common in urban than rural school districts. In the deaneries of Uppsala and other districts, maps of the Scandinavian countries, Europe, and the world were available in all elementary schools by 1886. “Necessary material” for geometry was also available, and the visual materials for natural science had been considerably improved, although their costs were still an issue.¹¹⁶ After the next inspection round in 1892, similar statements were made with the addition that most schools had obtained wall charts for Swedish history.¹¹⁷ In the other larger city in the diocese, Gävle, Inspector Insulander mentioned that “very few schools are lacking the most necessary teaching material; considerably many schools within almost every school district are in this regard well and richly provided.”¹¹⁸ One reason for this was that the Royal Ecclesiastical Department had made available wall charts at a reasonable price.¹¹⁹ In the northern inspection district, Hälsingland, geography teaching was reported to already have been well provided with materials,

114 BSFR in Hagunda and other deaneries 1881–1910.

115 BSFR (1892–98), 41.

116 BSFR (1882–86), 22.

117 BSFR (1887–92), 25–26.

118 BSFR (1882–86), 72.

119 *Ibid.*

but that new teaching materials in natural science had also been purchased.¹²⁰ A similar statement was made by Inspector Åmark, when he remarked that wall charts of the human body and the animal kingdom were generally available in normal elementary schools, but were less common in minor elementary schools. He pointed out that in the minor schools the teaching was also less successful, indicating the importance of visual teaching.¹²¹ The increasing number of wall charts in the natural sciences are also confirmed by statements from other inspectors.

Inspectors seem to have been concerned with the dissemination of wall charts in natural science during the 1890s as the supply of textbooks was already good. Textbooks shifted their focus to more detailed descriptions of plants and animals in their natural context rather than continuing the mid-nineteenth century emphasis on the usefulness of the natural world to humans.¹²² Despite these technical and theoretical developments, wall charts were used to transmit not only objective knowledge, but also, as Ana Maria Badanelli argues, “emotions, feelings, affections, fears and beliefs” through expressive, artistic, and aesthetic means.¹²³ In history lessons, links to current patriotic ideals might have been emphasised through emotional overtones in the teaching.¹²⁴ This also had implications for the production of new visual materials. During the national romanticism around the turn of the century, the production of wall charts increased in Denmark partly because of a willingness to enhance the national character although there was an abundance of German wall charts in the Danish schools.¹²⁵ In Sweden educators strove to produce wall charts in biblical history that linked the homeland to the national religion.¹²⁶ Hence, improved quality in the eyes of the school inspectors might mean better aesthetic or pedagogical quality, giving detailed, accessible, and objective knowledge, but it could also mean instilling patriotic values.

120 Ibid., 90.

121 BSFR (1887–92), 72–73. See also BSFR (1887–92), 93.

122 Hultén, “Scientists, Teachers and the ‘Scientific Textbook,’” 165–66.

123 Ana Maria Badanelli, “Representing Two Worlds: Illustrations in Spanish Textbooks for the Teaching of Religion and Object Lessons (1900–1970),” *History of Education* 41, no. 3 (2012), 320.

124 Erdmann (2015), 576.

125 Lars Qvortrop, “Anskuelsetavler: historisk, didaktisk og aestetisk,” in *Autopsi: mere end 500 anskuelsetavler*, ed. Malene Natasha Ratcliffe, Inger Sørensen, and Claus Holm (Copenhagen: Aarhus Universitet, 2009), 26–27.

126 Jakob Evertsson, “Alfred Dalin och de bibliska skolplanschernas förmedling av kulturhistoria,” in *Kulturell reproduktion i skola och nation*, ed. Urban Claesson and Dick Åhman (Möklinta: Gidlunds, 2016), 30.

Table 4. Assessment of teaching materials in schools in Hagunda and other deaneries 1881–1910

Year	Good	Average	Below average	Total
1881	52 (23%)	165 (71%)	14 (6%)	231 (100%)
1886	87 (34%)	167 (64%)	5 (2%)	259 (100%)
1892	121 (42%)	162 (56%)	7 (2%)	290 (100%)
1898	145 (45%)	169 (53%)	5 (2%)	319 (100%)
1904	158 (47%)	177 (52%)	4 (1%)	339 (100%)
1910	164 (46%)	189 (52%)	7 (2%)	360 (100%)

Source: Data collected by the author. Based on information in BSFR in Hagunda 1881–1910. Note: Percentages in parentheses indicate the average assessment of teaching materials in Hagunda schools per year.

One way to measure the dissemination of wall charts during this period is through the inspectors' evaluations of materials available in the schools. Although these included textbooks and other teaching aids, by the 1880s a good proportion of the evaluated materials were wall charts in different subjects, which might indicate how they developed. Inspector Hermansson's reports assessed the teaching materials in the district of Hagunda for the whole period of 1881–1910. Improvements in teaching materials, particularly in the late nineteenth century, are clear in Inspector Hermansson's statistics. As shown in Table 4, the number of schools with "good" teaching materials increased in 1881–1892 from 23 to 42 per cent, but then remained stable until 1910. Schools graded "average" in this respect dropped from 71 per cent in 1881 to 52 per cent in 1910, and those graded "below average" dropped from 6 per cent in 1881 to 2 per cent in 1910. Once purchased, wall charts were used for a long time, and by the end of the nineteenth century there was a movement among inspectors for domestic production. Older materials had also become obsolete or damaged by frequent use, as discussed below. The percentages might also have been affected by the rapid growth in schools, from 231 in 1881 to 360 in 1910. This expansion affected the overall purchase of materials as many recently established schools lacked the material base built up in older schools over the years.

Detailed information is not available for the other districts, but comparisons can still be made for certain years and decades. In 1881, for example, the inspector for the Uppsala deanery graded the available teaching materials in 33 per cent of the schools as good, in 49 per cent as average, and in 18 per cent as below average. Thus, although a high proportion of schools had good materials, a considerable number were below average.¹²⁷ In the inspection district of Vaksala in 1881, 21 per cent of schools were graded as good, 47 per cent as average, and 32 per cent (considerably higher than in other districts) as below average.¹²⁸ Finally, the districts of Gävle and Gästrikland provide comparable data for the period 1881–1892. In 1881, 20 per cent of the schools were rated as having good material, 69 per cent average, and 11 per cent below average. In 1892, 50 per cent of the schools were assessed as good,

¹²⁷ BSFR (1877–81), 18.

¹²⁸ *Ibid.*, 84.

45 per cent as average, and 5 per cent below average on teaching materials.¹²⁹ This confirms the rapid implementation of wall charts and the general quality of teaching materials in the 1880s in the larger districts of Hagunda and Gävle. The results for the Hagunda deanery show that grades for teaching materials remained stable over the next decades, indicating that the same materials continued to be used. By this time it seems wall charts were more important in visual teaching for children than textbook illustrations. In 1887, a state committee assessing the quality of teaching materials stated that with schools' new access to wall charts it was no longer necessary to include expensive illustrations in textbooks.¹³⁰ The committee also recommended that medium or large wall charts should be provided more cheaply.¹³¹

Nedanstående, på Kongl. Ekklesiastik-departementets föranstaltande utgifna undervisningsmateriel, erhållas på rakvisitation af skolråd genom nämnda departement eller direkt hos P. A. Norstedt & Söner till följande pris:

<p>Kristendom. Bibliska tafflor. 1. Gamla testamentet. 26 st. Uppfod. på 1/2 pr. 2. Nya testamentet. 26 st. Uppfod. på 1/2 pr. 3. Bib. berättelser. 26 st. Uppfod. på 1/2 pr. Åskådningsöfningar. Tafflor för isbedringsundervisning. 1. Skönl. Uppfod. på 1/2 pr. med 2 tafflor. 2. Bib. Uppfod. på 1/2 pr. med 2 tafflor. 3. Bib. Uppfod. på 1/2 pr. med 2 tafflor. 4 kr. Modersmålet. För det första stadieetappen af Carl Norstedts n. öfver Allmoget. 48 st. Uppfod. på 1/2 pr. 1 kr. Läsetabeller. För det första stadieetappen af Carl Norstedts n. öfver Allmoget. 48 st. Uppfod. på 1/2 pr. 1 kr. Historia. Sveriges regenter. 26 porträtt. Uppfod. på 1/2 pr. i 1 förlag. 400. Tafflor ur allmänna historien af S. Carlsson och L. Hjalmar. 26 tafflor. Uppfod. på 1/2 pr. 1 kr. med 2 tafflor. 10 kr.</p>	<p>Geografi (Kartor). Alla pris äro angifna för ex. enkelt uppfodrad på vitt och med rullar. Karta öfver Jordgloben af J. von Sydow. 10 kr. Karta öfver Asien af J. von Sydow. 8 kr. Karta öfver Afrika af J. von Sydow. 7 kr. Karta öfver Bibelns land och folk af J. von Sydow. 8 kr. Karta öfver Norden af J. von Sydow. 10 kr.</p>	<p>Kartor öfver Sveriges landskap: Upland. 8 kr. Södermanland. 6 kr. Örebro län. 6 kr. Östergötland. 8 kr. Småland och Öland. 8 kr. Gotland. 5,50 Halland. 6 kr. Gelfeborgs län. 6 kr.</p>	<p>Naturkunnighet. Våra viktigaste kulturväxder och deras skötsel. Tre värdlösa, med beskrifning af J. von Sydow. Uppfod. på 1/2 pr. 4 kr. Geologiska tafflor. 26 st. med text. af S. Carlsson. Uppfod. på 1/2 pr. 4 kr. Räkning och Geometri. Vigtiga öfver Sverige samt öfver och med följande tabeller af S. Carlsson. Uppfod. på vitt med min. 1 kr. Översikt öfver Sverige samt ö. väder. 16 st. i 1 förlag. af S. Carlsson. Uppfod. på 1/2 pr. 1 kr. Trädgårdsskötsel. Normalritningar till trädgårdsskötsel för de olika åren och för de olika delarna af landet. Uppfod. på 1/2 pr. 1 kr. 20 st.</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Figure 4. Advertisement of wall charts published in the Teachers Press. Source: Svensk Lärartidning, no. 14 (1891).

As Dane et al. showed, wall charts were often sold over a long period and only slowly adapted to new pedagogic and aesthetic demands.¹³² This led to critiques of older materials that inspectors deemed obsolete. In 1889 and 1890, for example, many schools temporarily ordered new wall maps to update the older material.¹³³ Initially, Sweden depended on imports from Germany and France, but demands were later made for nationally produced wall charts. The large bookshops Svanströms and Glerups largely managed the import of foreign wall charts, and a common practice was to place a sticker on top of the original publisher's name. One such case in Sweden is that of early wall charts of animals where the text under the sticker from Frans Svanströms & Co, Stockholm says, "Leipziger Schulbildverlag von F.E. Wachsmuth,

129 BSFR (1877–81), 120; BSFR (1887–92), 99.
 130 *Granskning af läroböcker för folkskolan jemte grundsatsar för deras uppställning. Underdånigt utlåtande afgifvet den 24 mars 1887 af utsedde kommitterade* (Stockholm: Kongl. Boktryckeriet, 1887), 17.
 131 *Granskning af läroböcker*, 48.
 132 Dane et al. (2011), 269.
 133 National Archives, Stockholm, Department of Ecclesiastical Affairs, Main Archive, F5B:10, "Räkenskaper för anskaffning och utdelning av undervisningsmaterial 1874–1903."

Leipzig,” indicating its German origin. However, the publisher P.A. Norstedt & Söner came to dominate the domestic production of wall charts in Sweden from the 1890s.¹³⁴ The national production of wall charts in other European countries also intensified during this period. It has been established, for example, that in Italy, the publisher Paravia’s catalogue of wall charts in Italian history and geography amounted to as much as 60 pages for the 1894–1895 school year.¹³⁵ In Sweden, the national production of wall charts was visible in teaching journals. Figure 4 shows an advertisement in *Svensk Läraretidning* (The Swedish Teacher’s Magazine) for a wide range of wall charts available from P.A. Norstedt in 1891. An article in the journal the following year argued that the quality of wall charts in the “above minimum” subjects had improved so substantially that those available for biblical history needed to be updated to meet the same standard.¹³⁶ This is interesting because the first wall charts produced in the mid-nineteenth century were for teaching Christianity and this shows that materials for the “above minimum” subjects had now bypassed the original productions.¹³⁷ Inspectors confirmed this by arguing for the purchase of better wall charts for schools, asserting that the existing materials had become dated.

The growth of new teaching materials is shown by the increase of recommended teaching materials from less than a page in 1870 to 24 pages in 1910.¹³⁸ In 1893, government funds for teaching materials doubled from 10,000 kronor to 20,000 kronor, with implications for the production and dissemination of domestic wall charts.¹³⁹ By the late 1890s and 1900s, inspectors often reported that the schools were well provided with teaching material, and as one inspector claimed, even had “rather much material that cannot be considered part of the most necessary,”¹⁴⁰ and argued that new and updated materials should be purchased in natural science to replace the previous wall charts of the animal kingdom. Wall charts on culturally important Swedish plants were also mentioned as an addition in many schools.¹⁴¹ Inspector Insulander reported that although teaching materials in geography, history, geometry, and natural sciences were normally available in the schools, those for the natural sciences might be improved.¹⁴² In one rural inspection district, visual materials for the natural sciences were not considered satisfactory, although some schools had an abundance of maps of Sweden.¹⁴³ In the 1900s it was often stated that schools were more or less well provided with wall charts.¹⁴⁴ Inspector Edquist explained the somewhat uneven distribution of teaching materials by claiming

134 Johannesson (1978), 147.

135 Targhetta (2015), 7.

136 *Svensk Läraretidning*, no. 14 (1892).

137 Early pedagogic images have been discussed in Hedvig Brander Jonsson, *Bild och fromhetsliv i 1800-talets Sverige* (Stockholm: Almqvist & Wiksell, 1994), 101.

138 National Archives, Department of Ecclesiastical Affairs, Main Archive, B3AA, “Förteckning på undervisningsmaterial för folkskolorna” 1870, 1910, Cirkulär m.m. angående folkundervisningen i riket.

139 Riksdagens protokoll (Parliamentary papers) (1893), Kongl. Maj:ts proposition 1:8, 26.

140 BSFR (1892–98), 14–15. See also BSFR (1892–98), 140.

141 BSFR (1892–98), 15. See also BSFR (1887–92), 39.

142 BSFR (1892–98), 101.

143 *Ibid.*, 71.

144 BSFR (1899–1904), 15; BSFR (1899–1904), 48.

that some teachers were more active than others in requesting such materials from the school boards.¹⁴⁵ Although there were examples of districts purchasing more modern wall charts of the human body, animals, and plants for teaching the natural sciences,¹⁴⁶ at the end of this period, complaints continued about the wall charts in natural science, particularly in smaller parishes.¹⁴⁷ However, based on inspector reports, it is evident that most schools by 1910 had access to wall charts in the “above minimum” subjects, demonstrating an impressive growth in visual teaching materials during the period.¹⁴⁸

Concluding remarks

The aim of this article was to discuss a topic that has hitherto been largely ignored in previous research: how wall charts were disseminated as an instructional technology to elementary schools from the mid-nineteenth to the early twentieth century. The study focused on the empirical case of Sweden and the subjects of geography, history, natural science, and geometry. A point of departure was the state’s important influence in the dissemination of wall charts through school inspections and other incentives, although empirical research has been lacking on how this was actually achieved during a crucial era in the establishment of mass schooling. The main sources analysed here were school inspector reports and national and regional statistics on teaching materials. Focusing on objects in the classroom, the paper is informed by a theoretical perspective inspired by recent developments in the history of education that incorporate both visual and material aspects. Some conclusions can now be drawn from the research problem addressed in this paper.

During the first phase of dissemination, starting in the 1860s, wall maps in geography were mainly in focus, but inspectors argued that parishes ought to purchase wall charts in the other subjects as well. The pedagogical use of this technology, however, was implemented only gradually as guidelines were often missing and senior teachers were not accustomed to using this type of material. Inspectors therefore encouraged the use of pedagogical guidelines to prepare for teaching with wall charts. School districts increased their spending on teaching materials from 1868 to 1882, indicating that the materials were in fact purchased by many schools. State allowances contributed to the import and production of wall charts and lowered some costs for the parishes. However, expenses for wall charts in the theoretical subjects amounted to only 18 per cent of school budgets over the period 1864–1880 while readers continued to be the main cost. Lists of recommended materials, providing the wall charts at a discounted price, were also issued regularly from the early 1870s. Local school districts paid most of the costs for teaching materials, and the inspectors therefore tried to influence them to obtain more wall charts. Later in the 1870s, improvements were made as inspectors promoted a standard set of wall charts included on the list of materials as a sort of *canon*. Statistics show that from 1874 to 1883 schools regularly requisitioned these new images from the state and used them for a long time. This might also partly explain the lack of substantially increased expenditures for wall charts during the period.

145 BSFR (1899–1904), 65.

146 *Ibid.*, 110.

147 BSFR (1905–10), 25. See also BSFR (1905–10), 92.

148 BSFR (1905–10), 39; BSFR (1905–10), 60; BSFR (1905–10), 152–3.

In the second phase, from the 1880s, the rapid increase in wall charts in the “above minimum” subjects was manifested by the list of teaching materials from 1880, where 22 of the 40 items belonged to these subjects. Inspectors argued particularly for improvement in materials for the natural sciences as such wall charts were still not available in some parishes. However, schools varied in the dissemination of these materials. *Readers* including images were another main priority for the schools, but towards the late nineteenth century, visual materials gained more ground. The number of wall charts in the different schools was exemplified by one of the larger inspection districts in the diocese of Uppsala. Natural sciences and geometry materials increased most substantially from 1881 to 1892, while the proportion of history and geography materials remained relatively stable in relation to the number of schools. In 1881, the inspector in this district rated the teaching materials in the schools as good in 23 per cent in 1881 and 46 per cent in 1910, demonstrating a considerable improvement in the eyes of the inspector. However, “good” might mean several things in the late nineteenth century: aesthetic quality, detailed and accurate knowledge, or even the promotion of patriotic values. It is therefore notable that Swedish moves towards domestic production of wall charts in the late nineteenth century were also underway in other European countries. Inspectors also argued for replacing older teaching materials with such recently issued wall charts. Judging by the inspector reports, by 1910 most schools seem to have been well provided with wall charts in the theoretical subjects.

This paper contributes new empirical knowledge to previously scant research on how the dissemination of wall charts was accomplished by identifying two phases. More specifically, it provides statistics about both national expenditures and numbers of wall charts ordered, thereby establishing a quantitative measure of the implementation of visual teaching materials. Furthermore, it shows, from the top-down perspective of inspector reports, what inspectors thought needed to be improved in the different districts of the Uppsala diocese and the measures that ought to be taken. The study also confirmed several previous findings in international research regarding the dissemination of wall charts, such as the importance of transnational trade and the emergence of new pedagogic ideals, state initiatives, and patriotic ideals. Altogether, it is safe to say that the role of the visual received became increasingly prominent in schools’ material culture in Sweden during the period investigated. Another theoretical contribution of this research is to further clarify the role of the state in building a visual material base through analysing the reports of school inspectors. Teaching practices changed as wall charts were increasingly implemented in the elementary schools, and state initiatives played a definite role in this, although other aspects such as local schools’ decisions to purchase materials were also important. Further research is needed, however, to establish the dissemination of wall charts in general over a longer period of time incorporating a wider range of sources. Such a study could provide a more complete picture of the implementation of this instructional technology in Sweden and the roles of various actors.

Acknowledgements

The author wishes to express his thanks to the two anonymous peer-reviewers for helpful comments.

Funding

This publication was supported by the Swedish Research Council (Project-ID 2018-05479).

About the author

Jakob Evertsson is Associate Professor in History and researcher at the Department of History, Uppsala University. Email: jakob.evertsson@hist.uu.se

References

Archival sources

National Archive (Riksarkivet), Stockholm

Department of Ecclesiastical Affairs, Main Archive

B3AA, "Förteckning på undervisningsmaterial för folkskolorna." Cirkulär m.m. angående folkundervisningen i riket (1870–1910).

F5B:1, Handlingar angående folkskoleinspektionen 1861–1907.

F5B:2–4, Protokoll vid folkskoleinspektörernas möten 1862–1881.

F5B:9, "Cassabok för åren 1864–1880, Öfversikt af utgifter för undervisningsmateriel."

F5B:9–10, Räkenskaper för anskaffning och utdelning av undervisningsmaterial 1877–1903.

National Archive (Riksarkivet), Uppsala

Uppsala chapter

G4B:1, Requisitioner af undervisningsmaterial för folkskolorna enligt domkapitlets cirkulär år 1866, no. 5 § 2.

G4B:1–3, "Lista för requisition af undervisningsmateriel för folkskolorna." 1866, 1875, 1876.

G4B:3, "Förteckning på undervisningsmateriel för folkskolorna." Uppsala domkapitels cirkulär 1880.

G4B:3, "Requisition å skolmaterial från Kongl. Ecklesiastik-Departementet år 1880." Närtuna och Gottröra församlingar.

Printed sources

Berättelser om folkskolorna i riket afgifna af tillförordnade folkskoleinspektörer (Stockholm: Nordiska bokh., 1861–1910).

Bidrag till Sveriges officiella statistik: undervisningsväsendet 1876–1911, folkskolorna 1882–1910. Central Bureau of Statistics, Stockholm.

Franzén, J., "Historik över folkskoleinspektionen i Sverige." *Folkundervisningens betänkande III angående förändrad anordning av folkskoleinspektionen avgivet den 31 januari 1913* (Stockholm: P.A. Norstedt, 1913).

Granskning af läroböcker för folkskolan jemte grundsatser för deras uppställning. Underdånigt utlåtande afgifvet den 24 mars 1887 af utsedde kommitterade (Stockholm: Kongl. Boktryckeriet, 1887).

Kongl. Maj:t nådiga instruktion för folkskoleinspektörer 15 juni 1861.

SFS 1842:19, *Kongl. Maj:ts nådiga stadga angående folk-undervisningen i riket; Gifwen den 18 junii 1842.*

SFS 1882:8, *Kongl. Maj:t förnyade stadga angående folkundervisningen i riket; gifven Stockholms slott den 20 januari 1882.*

Riksdagens protokoll (Parliamentary papers) (1893), Kongl. Maj:ts proposition 1:8, 26.

Svensk Läraretidning, no. 14 (1892).

Literature

- Badanelli, Ana Maria. "Representing Two Worlds: Illustrations in Spanish Textbooks for the Teaching of Religion and Object Lessons (1900–1970)." *History of Education*, 41, no. 3 (2012).
- Berlin, Nils Johan. *Lärobok i naturläran för folkskolor och folkskollärare-seminarier* (Lund: Gleerups, 1852).
- Brander Jonsson, Hedvig. *Bild och fromhetsliv i 1800-talets Sverige* (Stockholm: Almqvist & Wiksell, 1994).
- Bucchi, Massimiano. "Images of Science in the Classroom: Wall Charts and Science Education 1850–1920." *British Journal for the History of Science* 31, no. 2 (1998).
- Carter, Sarah Anne. *Object Lessons: How Nineteenth-Century Americans Learned to Make Sense of the Material World* (Oxford: OUP, 2018).
- Catteeuw, Karl. *Als de muren konden spreken: schoolwantsplaten en de geschiedenis van het Belgisch lager onderwijs*. Doctoral diss. (Leuven: Katholieke Universitet, 2005).
- Dane, Jacques, Sarah-Jane Earle, and Tijs Van Ruiten. "The Material Classroom." In *The Black Box of Schooling: A Cultural History of the Classroom*, edited by Sjaak Braster, Ian Grosvenor, and María del Mar del Pozo Andrés (Brussels: Peter Lang, 2011).
- Depaepe, Marc and Paul Smeyers. *Educational Research: Material Culture and its Representation* (Dordrecht: Springer, 2014).
- Dussel, Inés and Karin Priem. "The Visual in Histories of Education: A Reappraisal." *Paedagogica Historica* 53, no. 6 (2017).
- Edgren, Henrik. "'En främling i den svenska folkskolan': 1870-talets folkskoleundervisning i Naturkunnighet." In *Sann opplysning? Naturvitenskap i nordiske offentligheter gjennom fire århundrer*, edited by Marethe Roos and Johan Tønneson (Oslo: Cappelen Damm akademisk, 2017).
- Ellis, Heather. "Editorial: Science, Technologies and Material Culture in the History of Education." *History of Education* 46, no. 2 (2017).
- Erdmann, Elisabeth. "The Functionalization of History and Social Studies Education in Germany from the 19th Century Until Today." *History of Education & Children's Literature* 10, no. 1 (2015).
- Evertsson, Jakob. "Classroom Wall Charts and Biblical History: A Study of Educational Technology in Elementary Schools in Late Nineteenth- and Early Twentieth-Century Sweden." *History of Education* 50, no. 5 (2014).
- Evertsson, Jakob. "History, Nation and School Inspections: The Introduction of Citizenship Education in Elementary Schools in Late Nineteenth-Century Sweden." *History of Education* 44, no. 3 (2015).
- Evertsson, Jakob. "Alfred Dalin och de bibliska skolplanschernas förmedling av kulturhistoria." In *Kulturell reproduktion i skola och nation*, edited by Urban Claesson and Dick Åhman (Möklinta: Gidlunds, 2016).
- Gjerløff, Anne Katrin and Anette Faye Jacobsen. *Dansk skolehistorie 3: Da skolen blev sat i system 1850–1920* (Aarhus: Aarhus Universitetsforlag, 2014).
- Gonçalves Vidal, Diana and Wiara Alcântara. "The Material Turn in the History of Education." *Educació i Història: Revista d'Història de l'Educació* 38 (2021).
- Gralén, Josef. *Folkskoleinspektionen i Örebro län: åren 1861–1914 jämte kortfattad*

- översikt av folkundervisningen i länet före 1861 (Stockholm: Föreningen för svensk undervisningshistoria, 1958).
- Grosvenor, Ian. "‘To Act on the Minds of the Children’: Paintings into Schools and English Education." In *The Black Box of Schooling: A Cultural History of the Classroom*, edited by Sjaak Braster, Ian Grosvenor, and María del Mar del Pozo Andrés (Brussels: Peter Lang, 2011).
- Hultén, Magnus. "Scientists, Teachers and the ‘Scientific Textbook’: Interprofessional Relations and the Modernisation of Elementary Science Textbooks in Nineteenth-Century Sweden." *History of Education* 45, no. 2 (2016).
- Johansson, Egil. "‘Mindre än minimum’. Den gamla hemläsningen och föräldrarnas ambitioner för barnen i ljuset av folkskoleinspektörernas berättelser 1861–68." *Forskning om utbildning* 18, no. 4 (1991).
- Johannesson, Lena. *Den massproducerade bilden* (Stockholm: Almqvist & Wiksell, 1978).
- Johannesson, Lena, ed. "Skolplanschen och åskådningsundervisningen—den förbisedda läromedelstraditionen." *Om skolplanschsamlingen och skolmuseet i gamla Linköping* (Linköping: Linköping University, 1996).
- Jonsson, Olof G. *Skolplanschen: Argument i spänning mellan bild och text, perspektiv och kontext* (Uppsala: Uppsala University, 2006).
- Lindmark, Daniel. "Educational History in the Nordic Region: Reflections from a Swedish Perspective." *Espacio, Tiempo y Educación* 2, no. 2 (2015).
- Linné, Agneta. "The Lesson as a Pedagogic Text: A Case Study of Lesson Designs." *Journal of Curriculum Studies* 33, no. 2 (2001).
- Martin Lawn and Ian Grosvenor. "Introduction: The Materiality of Schooling." In *Materialities of Schooling: Design–Technology–Objects–Routines*, edited by Martin Lawn and Ian Grosvenor (Oxford: Symposium Books, 2005).
- Lawn, Martin and Ian Grosvenor. "Finding Traces, Researching Silences, Analysing Materiality: Notes from the United Kingdom." *Educació i Història: Revista d’Història de l’Educació* 38 (2021).
- Legné, Mattias. "Bilder av Norden från 1500 till 1900." *Landet under dina ögon: Kartutställning på Kungl. Biblioteket. 15 juni to 15 oktober 2006* (Stockholm: Kungl. Biblioteket, 2006).
- Lundahl, Christian and Martin Lawn. "The Swedish Schoolhouse: A Case Study in Transnational Influences in Education at the 1870s World Fairs." *Paedagogica Historica* 51, no. 3 (2015).
- Lundin, Sverker. *Skolans matematik: En kritisk analys av den svenska skolmatematikens förhistoria, uppkomst och utveckling* (Uppsala: Uppsala University, 2008).
- Läsebok för folkskolan: faksimilutgåva efter första upplagan 1868 (Stockholm: Gidlund, 1979).
- Markert, Michael et al. "Staging Nature in Twentieth-Century Teacher Education and Classrooms." *Paedagogica Historica* 56, no. 1–2 (2020).
- Mellberg, Margareta. *Pedagogen och det skrivna ordet: Skrivkonst och folkskollärare i Sverige 1870–1920* (Gothenburg: Gothenburg University, 1996).
- Müller, Walter. "Schulwandbilder als Quellen schul- und bildungshistorischer Forschung." In *Bilder als Quellen der Erziehungsgeschichte*, edited by Hanno Schmitt, Jörg-W. Link, and Frank Tosch (Bad Heilsbrunn: Verlag Julius Klinkhardt, 1997).

- Nilsson, Torbjörn. *Mellan Rådgivning och kontroll: Den statliga skolinspektionen som exempel* (Stockholm: Södertörns högskola, 2018).
- Nylund, Sven. *Småskollärautbildningen i Sverige* (Stockholm: Svenska kyrkans diakonistyrelses bokförlag, 1942).
- Qvortrop, Lars. "Anskuelsetavler: historisk, didaktisk og aestetisk." In *Autopsi: mere end 500 anskuelsetavler*, edited by Malene Natasha Ratcliffe, Inger Sørensen, and Claus Holm (Copenhagen: Aarhus Universitet, 2009).
- Persson, Östen. "Några anteckningar om den statliga regionala skolinspektionen." ed. Bengt Thelin, *Skolinspektörer minns* (Uppsala: Föreningen för svensk undervisningshistoria, 1994).
- Pozo Andrés, Maria del Mar, del. "Nacionalismo, globalización y cultura escolar: láminas murales para la enseñanza de la historia (1860–1939)." *Revista Mexicana de Historia de la Educación* 1, no. 1 (2013).
- Siljeström, Per Adam. *Inledning till skolarkitekturen* (Stockholm: P.A. Norstedt & Söner, 1856)
- Sørensen, Anna. *Svenska folkskolans historia 3: det svenska folkundervisningsväsendet 1860–1900* (Stockholm: Albert Bonniers förlag, 1942).
- Targhetta, Fabio. "Teaching with Images Between 19th and 20th Centuries: The Case of the Italian School Publisher Paravia." *Strenæ: Reserches sur les livres et objets culturels de l'enfance* 8 (2015).
- Tegborg, Lennart. *Folkskolans sekularisering 1895–1909: Upplösning av det administrativa sambandet mellan folkskola och kyrka i Sverige* (Stockholm: årsböcker i svensk undervisningshistoria, 1969).
- Terzian, Sevan. "The History of Technology and Education." In *The Oxford Handbook of the History of Education*, edited by John. L. Rury and Eileen H. Tamura (Oxford: OUP, 2019).
- Wennås, Olof. "Skolans styrning genom tiderna: en översikt." In *Utbildningshistoria 1998*, edited by Stig G Nordström and Gunnar Richardson (Uppsala: föreningen för svensk undervisningshistoria, 1998).
- Westberg, Johannes. "Stimulus or Impediment: The Impact of Matching Grants on the Funding of Elementary Schools in Sweden During the Nineteenth Century." *History of Education* 42, no. 1 (2013).
- Westberg, Johannes. *Att bygga ett skolväsende: folkskolans förutsättningar och framväxt 1840–1900* (Lund: Nordic Academic Press, 2014).
- Westberg, Johannes. *Funding the Rise of Mass Schooling: The Social, Economic and Cultural History of School Finance in Sweden, 1840–1900* (Cham: Palgrave McMillan, 2017).
- Wright, Susannah. "Citizenship, Moral Education and the English Elementary School." In *Mass Education and the Limits of State Building, c. 1870–1930*, edited by Laurence Brockliss and Nicola Sheldon (New York: Palgrave, 2012).