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Teaching manuals and the blackboard: Accessing historical classroom practices

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Teaching manuals and the blackboard: Accessing historical classroom practices

The blackboard, a useful teaching tool in nineteenth-century England, was transformed into a teaching necessity in the decades from 1870, when the Education Acts made school free and mandatory for all children. The resulting huge population of schoolchildren inspired the development of teaching techniques appropriate for large-group learning. Many of these techniques relied on the blackboard as a reusable demonstration space visible to the entire class at once, unlike a book or slate. To share these new practices among teachers, particularly the novice teachers recruited to serve the increased school population, dozens of teaching manuals were published around the turn of the twentieth century. These manuals' instructions for how to teach reading, writing, arithmetic, and nature study to elementary school students offer historians a rare glimpse into teachers' and students' school experiences by suggesting how the blackboard shaped classroom practices in late nineteenth and early twentieth century England.

Keywords: teaching manual; blackboard; teaching practice; materiality of the classroom

Introduction

Recent studies of the material culture of education, including school buildings, desks, and uniforms, help bring the everyday experience of past educational practices to life.¹ Studying the physicalities and objects of school highlights the teachers' and students' school worlds, which are rarely preserved in written records. Lawn and Grosvenor further suggest that classroom objects can be so commonplace and familiar that they become 'invisible' to historical inquiry.² One 'invisible' classroom fixture that has been overlooked by historians is a key tool as well as a ubiquitous symbol of teaching and learning: the blackboard. Looking at blackboard inscriptions formed a crucial part of children's instruction and school experience, so how were these chalk-drawn words and images designed and created to best educate students?

We cannot know what exactly teachers wrote and drew (and erased) on the blackboard. Other studies of classroom objects, such as types of paper, the pencil, and even sources of light, reveal the major impact of commonplace objects on school experience and teaching practice.³ Sources such as teachers' and students' journals, oral histories, and photographs can offer insight into aspects of classroom practice, but these records are rarely published or even preserved. Official sources such as inspectors' reports and school records are also valuable, but, as Dams,

¹ E.g., A.E. Benito, 'The School in the City: School Architecture as Discourse and as Text', *Paedagogia Historica* 39 (2003), 53-64; P.L.M. Martínez, 'History of School Desk Development in Terms of Hygiene and Pedagogy in Spain (1838-1936)', in *Materialities of Schooling: Design–Technology–Objects–Routines*, ed. M. Lawn and I. Grosvenor (Oxford: Symposium Books, 2005), 71-95; I. Dussel, 'The Shaping of a Citizenry with Style: a history of uniforms and vestimentary codes in Argentinian public schools', in *Materialities of Schooling: Design–Technology–Objects–Routines*, ed. M. Lawn and I.D. Grosvenor (Oxford: Symposium Books, 2005), 97-124; C. Burke and I.D. Grosvenor, *School* (London: Reaktion Books Ltd, 2008); F. Herman, A. Van Gorp, F. Simon, and M. Depaepe, 'The school desk: from concept to object', *History of Education* 40 (2011): 97-117.

² M. Lawn and I.D. Grosvenor, 'Introduction: The Materiality of Schooling', in *Materialities of Schooling: Design–Technology–Objects–Routines*, ed. M. Lawn and I.D. Grosvenor (Oxford: Symposium Books, 2005), 7-17, 7.

³ W.H. Brock and M.H. Price, 'Squared Paper in the Nineteenth Century: Instrument of Science and Engineering, and Symbol of Reform in Mathematical Education', *Educational Studies in Mathematics* 11 (1980): 365-381; Lawn and Grosvenor, 'Introduction', 2005; C. Burke, 'Light: Metaphor and Materiality in the History of Schooling', in *Materialities of Schooling: Design–Technology–Objects–Routines*, ed. M. Lawn and I.D. Grosvenor (Oxford: Symposium Books, 2005), 129-33.

Depaepe and Simon point out, they can be tainted by the writers' subjective recording and even 'wishful thinking', perhaps in the interests of improving a school's reputation.⁴

Another 'invisible' classroom object, the teaching manual, can shed light on blackboard use by revealing the best practices of the time, as defined in manuals' recommendations to teachers. These recommendations offer a unique perspective on teaching practice and classroom experience, by describing the idealized goals and priorities that teachers were aiming for. School textbooks have received significant and productive historical attention,⁵ but manuals were intended for teachers' use – not students' – and have been largely neglected by historians. Morgan, who used manuals about manners to study social class in late-eighteenth and early-nineteenth century England, points out that 'etiquette books did not create but rather codified...the behavioural rules which, for roughly half a century, had been natural to those accustomed to socializing in fashionable, polite circles'.⁶ Likewise, teaching manuals are texts of their time and thus reveal what was considered traditional teaching practices by defining the best practices.

Following the Education Acts of the late nineteenth century, dozens of teaching manuals were published in England. These books instructed teachers on how to teach subjects ranging from traditional school lessons on reading, writing, and arithmetic, to religion, drawing, geography, nature study, and even needlecraft.⁷ Manuals offer a range of content information, pedagogical suggestions, and, strikingly, pages of sample blackboard drawings. Alongside advice on lesson topics and Code requirements, manuals advise teachers how and when to use the blackboard. Also, manuals' content and writing style reveal the implicit expectations and responsibilities of an idealized teacher, as the manuals' intended reader. Manuals' criteria of what makes a good teacher are evident from the ways their texts address teachers. Thus teaching manuals are accessible and informative sources not just about teachers' and students' classroom practices and experiences, but also about the contemporaneous values and goals of education. In this essay, I present examples of teaching manuals' recommended techniques for blackboard use to show that blackboard use crucially shaped pedagogy in late nineteenth and early twentieth century England, and thus that teaching manuals offer a valuable window into past school experience.

⁴ K. Dams, M. Depaepe, and F. Simon, 'Sneaking into School: classroom history at work', in *Silences and Images: The social history of the classroom*, ed. I. Grosvenor, M. Lawn, and K. Rousmaniere (New York: Peter Lang Publishing, Inc., 1999), 15-46, 15.

⁵ E.g., A. Woodward, D.L. Elliott, and K.C. Nagel, *Textbooks in School and Society: An Annotated Bibliography and Guide to Research* (New York: Garland Publishing, 1988); W.E. Marsden, *The School Textbook: Geography, History, and Social Studies* (London: Woburn Press, 2001).

⁶ M. Morgan, *Manners, Morals and Class in England, 1774-1858* (New York: St. Martin's Press, 1994), 19.

⁷ E.g., J. Wilson, *Manual of Methods of Teaching: A Practical Guide to the Schoolroom*, (London: T. Nelson and Sons, 1892); F.F. Belsey, *The Bible and the Blackboard: Scripture Lessons for EYE and EAR* (London: Sunday School Union, [1896?]); E.R. Wethey, *A Geography Lesson: The Blackboard and Oral Teaching* (London: George Philip and Son, 1896); F.F. Lydon, *Nature Lessons with the Blackboard* (London: Burnes and Oates, Ltd., [1902]); R. Horspool, *Blackboard Drawing in Line and Mass* (London: Henry Frowde, Hodder, and Stoughton, 1909); E.R. Hambridge, *Blackboard Diagram Drawing for Teachers of Needlecraft* (Bath: Sir Isaac Pitman and Sons, Ltd., [1913]).

Manuals in context

The Education Acts made school state-funded and mandatory for all children in England, creating an explosive increase in school populations.⁸ This newly expanded number of schoolchildren inspired adaptations in teaching practice. The blackboard, a common teaching tool throughout the nineteenth century, offered an inexpensive and efficient way to make lessons visible to large audiences of students. Kidwell, Ackerberg-Hastings, and Roberts cite a few mentions of blackboards in texts before the nineteenth century, but the first documented blackboard use in the United States was by George Baron, an English-born mathematics teacher at West Point in 1801-1802.⁹ The early history of the blackboard in England is not known, but a common origin story credits an early-nineteenth-century Scottish schoolteacher with the invention. He supposedly hung his students' slates together on the wall, making a large 'slate board' to write up his geography lessons where the whole class could see them at once.¹⁰ Regardless of its little-documented origins, by 1844 England's newly created Committee of Council on Education had deemed the blackboard a classroom necessity, meaning that schools could use state-funded grants to buy it.¹¹ Teaching manuals were published to share new post-Education Acts pedagogical techniques, including ways of teaching on the blackboard, with teachers, many of whom were novice teachers hired to accommodate the increase in students. Also, the new state system of education promoted standardization across the country, and manuals helped disseminate new teaching standards and the often-revised Code to teachers.

Manuals were written by authors from diverse backgrounds, including teachers, teacher trainers, school heads, members of the clergy, and even scientists and artists, most likely encouraged by new teachers' lucrative demand for training and information. Some manuals specified that they were intended for new teachers, while others promoted themselves for anyone's use; thus a manual could be used as a textbook to prepare pupil teachers for certification exams, while 'it is also intended to act as a guide to the daily work of the school'.¹² Manuals ranged in price from roughly three to six shillings, comparable to school textbooks and children's books at the time, though it is not clear whether manuals were marketed for purchase by schools or individual teachers. I focus on manuals for teaching elementary school, specifically on the subjects of writing, reading, arithmetic, and nature study. Nature study, a new subject that grew in popularity in England in the late nineteenth century, became a requirement in state

⁸ A. Green, *Education and State Formation: The Rise of Education Systems in England, France, and the USA* (London: Macmillan Press Ltd., 1990), 302; A. Weedon, *Victorian Publishing: The Economics of Book Production for a Mass Market, 1836-1916* (Hants, England: Ashgate Publishing Ltd., 2003), 114.

⁹ P. Kidwell, A. Ackerberg-Hastings, and D. Roberts, *Tools of American Mathematics Teaching, 1800-2000* (Washington, D.C.: Smithsonian Institution, 2008), 23. Some sources (e.g., T. Levy, 'First in His Class: The Many Contributions of Samuel Read Hall', *OAH Magazine of History* Fall (1991): 38-41.) claim that teacher Samuel Read Hall was the first to use a blackboard, in 1816 in Rumford, Maine, suggesting that the blackboard may have been invented independently in multiple places.

¹⁰ I have found no printed histories of blackboard use except for Kidwell et al., *Tools*, 2008, chapter 2. This story comes from several websites, e.g., W. Fernley, 'History of the Chalkboard', Articlesbase, <<http://www.articlesbase.com/education-articles/history-of-the-chalkboard-660163.html>> (accessed 19-5-2009); S. Mithra, 'What is the history of the chalkboard?', WiseGeek, <<http://www.wisegeek.com/what-is-the-history-of-the-chalkboard.htm>> (accessed 19 May 2009).

¹¹ Committee Minutes 1844, in D. Layton, *Science for the People: The origins of the school science curriculum in England* (London: George Allen & Unwin Ltd., 1973), 95. Similarly, in his *The School Manager's Handbook, 1904-1905* (London: Edward Arnold, [1903], 15), Joseph King wrote, 'blackboards with easels, or better, where the arrangement of the room permits, fixed permanently on the wall, are necessities'.

¹² H. Elsom, *Notes of Lessons for Pupil Teachers, Scholarship Candidates, Acting Teachers, and Students in Training* (London: Simpkin, Marshall, Hamilton, Kent & Co, Ltd., [1890]), preface.

elementary schools in 1900.¹³ This new subject would have been less familiar to teachers than traditional subjects, thus creating a need for teaching manuals specifically on nature study. Like other manuals, nature study manuals contain content information for specific lessons with sample blackboard drawings, but there are sharp contrasts in manuals' suggested teaching practices for different subjects. Manuals advise teaching traditional subjects by a repetitive pattern of the teacher's demonstration, children's imitation, teacher's correction, and children's practice. However, nature study manuals encourage children's inspection and handling of plants and animals, with the goal of teaching skills of observation and comparison as well as factual information. Based on the popular nineteenth century teaching practice of object lessons, nature study was intended to teach children through contact with physical objects, thus also developing their observation skills.¹⁴ Imitation was part of this learning process, as the teacher demonstrated proper observation techniques, but nature study lessons did not involve drill or rote learning. To explore these differences, I compare the uses of the blackboard recommended by nature study manuals with those recommended by manuals on traditional subjects such as writing, reading, and arithmetic.

Recommendations for teaching and learning

Manuals usually offer specific advice for several subjects' curricula, but they promote pedagogy as largely universal. All subjects should entail an oral explanation and visual demonstration by the teacher, with examples and references to students' previous lessons and experiences. Then students should practice by imitating the teacher's demonstration, either orally or on their individual slates or paper. 'Meantime, you [the teacher] may go behind them to supervise, correct, and encourage their efforts'.¹⁵ Then, 'resort to the blackboard to exaggerate common mistakes, and to warn against such malformations'.¹⁶ These instructions portray the teacher as explainer, demonstrator, and corrector. There is no active knowledge construction by students, only explanation followed by drill, with the teacher giving corrections.

The blackboard made this style of teaching possible, by providing the teacher with a large writing surface visible to all the students. An 1894 manual asserts,

A blackboard... is a necessary appliance in class teaching. Such a board enables the teacher to exhibit the errors made by the scholars. It also enables him to show models of correct writing for his pupils to copy. There will still be need for individual instruction; but...there will be less need for individual direction than when the class is at work at a variety of copies.¹⁷

¹³ *Official Report of the Nature-Study Exhibition and Conferences held in the Royal Botanical Society's Gardens, Regent's Park, London. July 23rd to August 5th, 1902* (London: Blackie and Son, Ltd., 1903); D. Allen, *The Naturalist in Britain: A Social History* (Middlesex, England: Penguin Books Ltd., 1976), 202; E.W. Jenkins, 'Science, Sentimentalism or Social Control? The Nature Study Movement in England and Wales, 1899-1914', *History of Education* 10 (1981): 33-43; S.G. Kohlstedt, 'Nature Study in North America and Australasia, 1890-1945: International Connections and Local Implementations', *Historical Records of Australian Science* 11 (1997): 439-454, 446; S.G. Kohlstedt, *Teaching Children Science* (Chicago: University of Chicago Press, 2010).

¹⁴ *Official Report of the Nature-Study Exhibition, 1903*; Kohlstedt, 'Nature Study', 1997; M.J. Keene, 'Object Lessons: Sensory Science Education 1830-1870' (PhD thesis, University of Cambridge, 2008).

¹⁵ Elsom, *Notes of Lessons*, [1890], 37.

¹⁶ F.W. Hackwood, *Practical Method of Class Management: A ready guide of useful hints to young class teachers* (London: George Philip & Son, 1896), 47.

¹⁷ J.H. Cowham, *A New School Method. For pupil teachers and students* (London: Westminster School Book Depot, and also from Simpkin, Marshall, Hamilton, Kent & Co., Ltd., 1894), 89-90.

This manual refers to the benefits of teaching how to write using the blackboard – namely, by reducing individual instruction and thus saving time – and the same benefits were recognized for other subjects. With a large surface that allowed spontaneous writing and drawing, teachers could make their explanations and corrections clear and engaging for several students at once. Without it, a teacher would have to spend more time instructing each child, a challenging if not impossible task in crowded classrooms of young children.

Handwriting lessons should focus on a demonstration of how to make the letter (Figure 1). The teacher would draw it on the blackboard while narrating the technique. Then children practiced the letter themselves, while the teacher walked around the room making corrections. Next, the teacher corrected common mistakes using the blackboard in front of the class. Finally, students were assigned a lesson to copy, for a longer period of individual practice.¹⁸ An 1892 manual claims, '[writing] can best be taught by means of the blackboard, as a medium of demonstration, whether the pupils are to write on slates or copies'.¹⁹ Thus the emphasis fell on students' reproduction of the teacher's work, and the material aspect of copying onto slate or paper was considered unimportant.

Perhaps imitation is the obvious method of teaching a mechanical skill like writing, and teaching more interpretative skills such as reading may be expected to use more flexible, interactive lessons. However, manuals focus on imitation of the teacher's model during rigidly structured reading lessons, demonstrated by the lists many manuals use to convey to teachers what should be done in a reading lesson, e.g.,

(1) Every child must look steadily at the word; (2) the word must be sounded exactly as the teacher does it; (3) all the pupils must say it at the same time. If reading is to be taught through spelling of the words, spell each word slowly, then pronounce it distinctly, so that every child can hear you. The class will then spell and pronounce the word simultaneously after your model... You act as *guide* and *corrector*.²⁰

These rigid lists of activities that 'must' happen in the lesson leave little room for individuality or creativity by either the teacher or the students (Figure 2). This imitation-based method was supplemented by explanations and written demonstrations: 'All words with peculiarities in spelling should be taken and put upon the blackboard, the teacher drawing attention to the peculiarities'.²¹ Several manuals assert that '*imitation* plays a most important part in teaching reading'.²² 'Pattern reading' was one common method of practicing imitation, in which the teacher read a passage aloud as a model or 'pattern' of good oral reading. Students were then meant to imitate the teacher's pronunciation, speed, and expression in their own oral reading. Pattern reading should 'form a very prominent feature of every reading lesson', and 'the scholars moreover should be animated by the desire to attain the high standard of the teacher's pattern'.²³ This pedagogy suggests that students become good readers by copying the teacher's example. Even reading, a deductive decoding skill that is rather different from memorizing how to write letters, was taught through imitation and drill, with the blackboard as a demonstration space.

¹⁸ J.C. Sharp, *Writing, And How To Teach It. A manual of one hundred lessons, for the guidance of teachers in the use of methods suggested* (London: Allman & Son, [1888?]); Elsom, *Notes of Lessons*, [1890]; Cowham, *A new school method*, Part 1, 1894; Hackwood, *Practical Method*, 1896.

¹⁹ Elsom, *Notes of Lessons*, [1890], 36.

²⁰ Wilson, *Manual of Methods*, 1892, 10, emphasis in the original.

²¹ Elsom, *Notes of Lessons*, [1890], 18.

²² Wilson, *Manual of Methods*, 1892, 9.

²³ Cowham, *A New School Method*, 1894, Part 1:3-4.

The same pedagogy of demonstration and imitation was applied to arithmetic: ‘Arithmetic, like most other branches [subjects], is mainly taught through the eye. This necessitates a teacher and a blackboard’.²⁴ Oral and visual demonstrations were thus considered requisite for teaching an understanding of numerical notation and place value, and how to write out a sequence of operations for more complex problems (Figure 3). Similarly, ‘the teacher’s black-board work must always present a model of arrangement’ of numbers and operations.²⁵ The teacher’s chief role was as model-maker, demonstrating figures and problems on the blackboard or on pieces of paper hung around the room, where ‘it would thus be readily accessible to the pupils at any time, and always available for individual scrutiny’.²⁶ Also, ‘for a time, till he gets familiar with it, the pupil should have upon the top of his slate an exact copy of the heading on the blackboard [showing place value]’.²⁷ This heading would provide students with a reliable and accurate model of how to write out arithmetic problems, until they had memorized the expected format.

It was important for students to practice the skills demonstrated by their teacher, but more important were the teacher’s *corrections* of students’ practice, to teach them to adhere to the demonstrated standards. The end goal of these methods was memorization, achieved through students’ repetition of corrected, acceptable imitations of the teacher’s model. Nature study manuals, however, do not offer advice on repetitive drills or specific corrections. They lack the rigid lists of lesson activities, and there are no included written exercises for students to copy. Instead, the manuals offer information about nature written to inform teachers, unlike manuals on other subjects. It seems that teachers were assumed to know how to write letters and carry out addition, but they were not expected to know how many leaves a primrose has or why an eel has a long narrow body.²⁸ Nature study manuals present themselves as informational guides for teachers’ nature study lessons, rather than ‘manuals’ in the sense of instructing how to carry out a task. These manuals still offer advice on how to structure lessons and how to use the blackboard, but they emphasize that teachers should choose which lessons and techniques would be best for their class. A comparison of several nature study manuals’ lessons on the same topic – the frog – highlights the common themes of this genre of manual.

Nature study manuals offer brief information on and drawings of several local species of plants and animals, which serve as the curriculum.²⁹ These local organisms were chosen not just to ensure specimen availability but also for their familiarity and thus appeal to children: ‘All the animals selected are such as can be seen alive even by children in crowded cities, or can be obtained without the slightest trouble, “in the flesh”’.³⁰ Major themes within each lesson are the organism’s anatomy, life cycle, and ‘mode of life’, including diet, habitat, and behavior. Manuals present textual information as descriptions, often incorporating comparisons with other organisms (Figure 4). By writing that the frog has ‘a very wide mouth, like that of the swallow or the goatsucker’, a 1902 manual refers to familiar creatures with similar characteristics to the one

²⁴ Wilson, *Manual of Methods*, 1892, 211.

²⁵ Cowham, *A New School Method*, 1894, Part 2:243.

²⁶ Wilson, *Manual of Methods*, 1892, 52.

²⁷ Wilson, *Manual of Methods*, 1892, 107.

²⁸ A primrose has five leaves, and the eel is slim to fit into the rock crevices where it lives, according to W.P. Pycraft and J. Kelman, *Nature Teaching on the Blackboard* (London: Caxton Publishing Co., 1910), vol. 1: 29 and vol. 3: 67.

²⁹ I explore nature study blackboard manuals in detail in ‘*Nature Teaching on the Blackboard: visual learning in early twentieth century English school science*’, forthcoming.

³⁰ Pycraft and Kelman, *Nature Teaching*, 1910, vol. 1: vi.

described for the frog.³¹ To explain the anatomy of a frog's egg, a 1910 manual likens it to a more familiar egg: 'The black spot represents the yolk of, say, a hen's egg, the clear surrounding jelly the white of the hen's egg – uncooked'.³² Thus teachers (and students) could relate this new information to something they already knew, thus helping them to understand and remember it. But this informative text was not intended to be a script for lessons:

Indeed, only to Nature students can safely be entrusted the task of supervising Nature Study; and hence it is that just as the drawings in this book are not intended to be copied when the actual objects are available, so the notes are not intended to be memorised: They should be *thought through*, rather than read through, with due reference to Nature itself.³³

Thus even teachers should learn from 'Nature itself' rather than by memorizing manuals' content or imitating their drawings, a major contrast to the recommended pedagogy for other subjects.

Lessons were meant to comprise observation of living or dead specimens, with the teacher pointing out and explaining certain traits while also drawing on the blackboard (Figure 5):

Draw the sketch of the frog, and compare with the living specimen, which should be used in illustration. Elicit the uses of the strong hind legs, the webbed hind feet, and refer to the crouching attitude as evidence of a jumping animal. Draw the skeleton, when the structure will be more closely shown.³⁴

The blackboard drawings should highlight certain features of the specimen and lead into a discussion of anatomical function. If more images were needed, such as to zoom in on a feature or 'when the structure will be more closely shown', they could be drawn easily and quickly with chalk and the blackboard.

Just as manuals' text was not supposed to be the basis of teachers' lessons, the drawings alone were also not meant to constitute a lesson:

It cannot be too strongly emphasised that the object of these studies is to lead pupils to look at, to observe, and to learn to interpret Nature for themselves, and that these plates [the manual's drawings] can only meet this end if they are used along with living twigs, leaves, flowers, and fruits.³⁵

Equipped with natural objects, students were encouraged both to observe and actively engage with them through handling and dissection. For example, both teachers and students should 'note the fashion of feeding' by the live frog as well as examine its mouth structure: 'If a dead frog be examined and the eyes pressed down, it will be found that they convert the roof of the mouth into a channel well adapted to facilitate the swallowing of large mouthfuls of food'.³⁶ Observation and experience, guided by the teacher's explanations and drawings, were presented as the basis of learning about nature.

Manuals repeatedly describe their sample drawings as 'simple' and easy to draw: A blackboard drawing to be of value need be neither accurate nor complete, its main object being to direct attention to certain features of the object under

³¹ Lydon, *Nature Lessons*, [1902], 48.

³² Pycraft and Kelman, *Nature Teaching*, 1910, vol. 3: 51.

³³ F.H. Shoosmith, *Nature Study and the Blackboard* (London: Evans Brothers, [Vol. 1 1920, Vol. 2 1926]), vol 1: xiv, emphasis in the original.

³⁴ Lydon, *Nature Lessons*, [1902], 48.

³⁵ Pycraft and Kelman, *Nature Teaching*, 1910, vol.1: v.

³⁶ Pycraft and Kelman, *Nature Teaching*, 1910, vol. 3: 52.

observation, and so long as it is thus directive it is of value, however crude and imperfect it may be.³⁷

The goal of blackboard drawings was not necessarily to be realistic, but rather to catch the eye and illustrate what the teacher says and what the children observe. Drawings should be done quickly and on-the-spot, to hold students' attention with a sense of dynamic performance: 'Illustrations...done spontaneously before the class, which depend for their value not so much on strict accuracy of drawing, or the amount of detail...as on the interest excited in the children by seeing the sketch rapidly developed before their eyes'.³⁸ This interest made blackboard drawings useful for teaching other subjects too, because 'young children watch with great interest anything that the teacher does', and therefore 'they attempt to write letters or words made in their presence on the board much more readily than they attempt to copy letters from the printed page'.³⁹ Pre-made drawings or printed wallcharts were not trusted to hold the same appeal, and for that reason manuals recommend on-the-spot blackboard drawings.

Rejecting the demonstration-repetition-correction pattern of other subjects, nature study lessons were instead dynamic and interactive. They included tactile, visual, and aural experiences for students, with the blackboard as a surface for visual instruction through spontaneously-drawn diagrams. However, the focus of the lesson was observation and hands-on exploration of the natural object itself. The Board of Education emphasized this aspect of nature study in 1903:

The main factor which marks off 'Nature Study' from other school subjects should be that in it the instruction proceeds solely from the natural object, and never from description or reading. In practically every other subject, ...the child has to take things for granted, and must depend on the good faith of the teacher or of the printed book.⁴⁰

For reading, writing and arithmetic lessons, teachers were advised to use the blackboard as a central demonstration space, to write up the correct techniques for all the students to see at once. In that case, the blackboard was a crucial tool for defining 'correctness' and truth. In nature study, the blackboard should be used to supplement lessons, not define them. Blackboard drawings offered information that was not available, such as all the stages of frog development, or not visible on specimens, such as internal skeletons or tiny details. Nature study manuals do not address imitation or 'correctness', but rather emphasize the importance of students' experiences with nature. This diversity of blackboard teaching practice by subject shows that manuals' recommendations for blackboard use offer a revealing glimpse of what teachers and students may have seen and done in turn-of-the-twentieth-century classrooms in England.

The idealized teacher

Manuals' views of what teachers should know and how they should act are subtly embedded within the teaching advice. How manuals address the reader, an idealized teacher, and what they advise teachers to do to prepare for lessons reflect the manuals' recommended pedagogies for teaching students. Manuals on traditional subjects are written as commands and specific instructions. They include detailed directions on where and how the teacher should stand, where the teacher should arrange students' desks, how the teacher should talk to students, how the

³⁷ Shoosmith, *Nature Study*, [1920], ix.

³⁸ Lydon, *Nature Lessons*, [1902], 1.

³⁹ Cowham, *A New School Method*, 1894, Part 1: 10.

⁴⁰ Board of Education, *Suggestions for the Consideration of Teachers and Others Concerned in the Work of Public Elementary Schools* (London: Wyman and Sons, 1905), 48-49.

teacher should make students sit and hold their books or pencils, and especially how the teacher should plan the lessons.⁴¹ These manuals usually give one detailed example of a complete lesson for each subject and several basic ‘notes’ for other potential lesson topics, without specific content or methods. Teachers were expected to use the lesson ‘notes’ to plan their own lessons once they had more experience in the classroom; however, teachers were expected to write lessons *just like* the example lesson in the manual. Thus teachers were meant to learn through imitation, just like their students. A manual served as demonstrator, and the teacher was supposed to imitate the manual’s guidelines and example to produce lessons. However, these inflexible manuals were generally written for pupil teachers. Perhaps they present their methods as unquestionable for novice teachers, while expecting experienced teachers to select from and adapt the manuals’ advice.

Nature study manuals tend to lack the authoritative commands of general teaching manuals, perhaps because they were intended for teachers with diverse levels of experience. These manuals address teachers respectfully, encouraging them to design their own lessons in accordance with local nature and to learn from nature in the same ways as their students. Nature study manuals suggest that teachers themselves collect specimens from local habitats to use as nature study object lessons.⁴² They also encourage teachers to use hand lenses and microscopes to examine specimens closely.⁴³ Nature study manuals act as sources of factual information and as proponents of hands-on, object-based pedagogy, but rarely do they include detailed sample lessons or statements of strict rules for teachers to follow. On the contrary, they emphasize adapting the books’ information to the schools’ surroundings, resources, and students’ interests: ‘The scheme is not intended to be exhaustive, but will be naturally extended by the teacher to meet his particular requirements’.⁴⁴ Thus they empower the teacher to design nature study lessons around his or her knowledge of the local environment, community, and students, rather than presenting a universal and rigid method like the ‘demonstrate-imitate-correct’ routine of other subjects.

General teaching manuals as well as nature study manuals emphasize the importance of a teacher preparing well for lessons, meaning ‘to make himself master of the subject. By doing this he will gain confidence himself, he will be able to interest the children, and will be able to plan out his lesson with greater ease’.⁴⁵ But, in contrast to nature study manuals’ pages of information about nature for teachers, general manuals do not offer advice on how teachers can make themselves ‘master’ of a subject – there is no background information or suggestions for how to learn the subject. General manuals assume that teachers know their subjects or are capable of learning about them without manuals’ guidance. By emphasizing preparedness and guideline-following, general manuals present the ideal teacher as quite similar to the ideal student: able to follow instructions, meet Code requirements, and imitate manuals’ lessons in their own lessons. However, nature study manuals encourage teachers to observe and dissect specimens to learn about nature, thus preparing for their classes by practicing the same methods of learning that the children would employ. By using the same methods to teach teachers and students, both general

⁴¹ E.g., Sharp, *Writing*, [1888?], ix-x; Elsom, *Notes of Lessons*, [1890], 12-14; Wilson, *Manual of Methods*, 1892, 37; Hackwood, *Practical Method*, 1896, 16-24, 44-45.

⁴² E.g., Lydon, *Nature Lessons*, [1902]; Pycraft and Kelman, *Nature Teaching*, 1910; Shoosmith, *Nature Study*, [1920].

⁴³ Pycraft and Kelman, *Nature Teaching*, 1910, vol. 3: 1.

⁴⁴ W.F. Rankine, *Nature Study and Brush Drawing* (London: Cassell and Company, Limited, 1908), 1.

⁴⁵ Elsom, *Notes of Lessons*, [1890], 9.

and nature study manuals imply that their recommended pedagogy was effective for learners of all ages.

Conclusion

Manuals recommend different uses for the blackboard based on different subjects, from the traditional rote-based lessons in reading, writing, and arithmetic to the newly required interactive lessons in nature study. Thus the blackboard did not have a stable or obvious use in England at this time, but rather its adaptability to many diverse uses, such as those best suited for teaching different subjects, crucially shaped teachers' and students' daily actions and school experiences.

This preliminary overview has simplified many of the nuances of recommended blackboard use to reach more general conclusions, but it is clear that teaching manuals offer a unique and revealing perspective on teaching practice and on how the blackboard both embodied and influenced classroom experience in late nineteenth and early twentieth century England. The growing historiographic interest in classroom materials and experiences promises to yield deeper understandings of school life, including how daily practices relied on teaching tools such as the blackboard. These material components of school life were crucial determinants of how students learned, and we as historians must continue to seek out unconsidered sources and perspectives to help construct a more comprehensive image of past schooling.

Although teaching manuals reveal recommended practices, they do not necessarily indicate *actual* practices. However, Morgan claims that 'ideals reveal as much or more about a society as does reality'.⁴⁶ The applicability and popularity of manuals' advice is evident from the large number of teaching manuals published and sold in the late nineteenth and early twentieth century in England, as in the case of Morgan's etiquette books. Manuals' advice must have appeared practical, achievable, and thus useful to people who then decided to buy them. In particular, school instruction was institutionalized and regulated, so teaching manuals probably resemble actual practice even more than manuals on less externally-controlled topics such as etiquette.

Manuals give us a crucial perspective on teaching philosophies and practices by presenting certain methods as goals to idealized teachers. Specifically, recommended blackboard use is a valuable entry point to accessing pedagogy because of its centrality to classroom life, especially the processes of drawing, writing, and correcting that underlie the transmission of information and understanding. Our familiarity with these key explanatory processes and with the blackboard makes them vulnerable to historiographic 'invisibility', but by calling attention to them we can find out more about past educational practices and school experiences. Furthermore, the blackboard has been a powerful cultural symbol of teaching and learning for the past two centuries. Therefore it would be beneficial for educators and historians of education to know the origins and meanings of the blackboard as a symbol as well as a familiar classroom fixture and adaptable educational tool.

⁴⁶ Morgan, *Manners*, 1994, 2.