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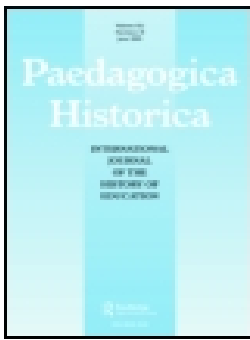
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Educating the scientific housewife: the conceptualisation of housework in English girls' day schools, 1870–1914

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ABSTRACT

As educational opportunities for women and girls expanded in the Victorian and Edwardian periods, science and domestic subjects were increasingly linked. This article draws upon research from the history of education and women's history to examine how schools contributed to contemporary constructions of housework. It takes two case studies: the North London Collegiate School and Manchester High School for Girls. Both were new day schools for the daughters of the professional middle classes and faced the challenge of designing an appropriate course of study for future ladies. This article argues that these schools drew on the perceived relationship between science and domestic subjects to form their own conceptualisation of housework as an intellectual activity. Practical work in science and domestic subjects was central to this representation, as the schools acknowledged the realities of running a middle-class household. This conceptualisation of practical, intellectual housework aligned with the interests of female students and staff.

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In 1850, Frances Mary Buss founded the North London Collegiate School (NLCS), a fee-paying day school which sought to offer girls of the professional classes an education of the same standard as middle-class boys. The school's ethos marked a departure from the middle-class tradition of home-schooling girls with an emphasis on social accomplishments, with little time devoted to intellectual activity.¹ It was a highly influential model, and the establishment of similar schools across the country followed in the second half of the nineteenth century, including Manchester High School for Girls (MHSG). These new day schools were lightning rods for the debates about the appropriate course of study for future ladies. Analysis of the schools illuminates how the middle-class woman and domestic labour were conceptualised in Victorian and Edwardian culture; as Jane Hamlett has shown, domesticity was constructed in institutions as well as the home.² Two of the key questions asked by contemporaries are particularly pertinent here. Firstly, what should the relationship be between domestic subjects and science?³ And secondly,

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¹Jane Martin, *Women and the Politics of Schooling in Victorian and Edwardian England* (London: Leicester University Press, 1999), 73.

²Jane Hamlett, *At Home in the Institution: Material Life in Asylums, Lodging Houses and Schools in Victorian and Edwardian England* (Basingstoke: Palgrave Macmillan, 2014).

³The term "domestic subjects" is used for consistency, but in practice the title (and content) of these classes, which were explicitly designed to prepare students for home life, changed.

how should schools for future middle-class ladies reach a balance between teaching intellectual subjects, and acknowledging the practical realities of domestic labour?⁴ This article is centred around a third question: as individual schools formed their own solutions to these uncertainties, how were housework and the housewife represented? A consideration of this third question can contribute to our understanding of how schools conceptualised housework, and thus how women and girls within these institutions asserted their own agency in social constructions of the housewife.

Important feminist work on the history of domestic training has suggested that educational institutions worked within a patriarchal system to reproduce women's association with the home and exclude them from professional and public opportunities.⁵ Certainly, the new day schools existed within a patriarchal society and culture, in which domestic work was undervalued and women were professionally marginalised. However, this article focuses on an alternative perspective, by demonstrating how educational institutions for girls could create their own conceptualisations of domestic labour. By emphasising agency, this article shows how the relationship forged between science and domestic subjects in schools could align with the interests of female teachers and students. Drawing on the work of Susan Miller, agency is defined to mean individuals pursuing their own interests and agendas, which may or may not go against the reigning status quo.⁶

Research has suggested that in general domestic subjects were devalued and considered as outside the intellectual ideals underpinning these new day schools.⁷ Other scholars have suggested that the presentation of domestic subjects as scientific was a means to make them more acceptable to middle-class parents, who were concerned by the degradation of ladies by housework.⁸ However, a recent PhD thesis by Sayaka Nakagomi has refuted the argument that domestic subjects were marginalised, showing that they have always occupied a place in the new middle-class girls' schools.⁹ This is in parallel with early research on the history of the middle-class woman which depicted her as a leisured Victorian lady, attended by servants and untouched by the indignity of domestic labour.¹⁰ Scholars have since recognised that the middle-class home was "the locus of back-breaking toil".¹¹ Domestic servants were not as prevalent as once thought, and in some cases it was common for mistresses to work alongside them.¹² The average middle-class woman would likely

⁴These questions were asked in national and local contexts. For a contemporary summary, see the prefatory note to the *Interim Memorandum on the Teaching of Housecraft in Girls' Secondary Schools* (London: His Majesty's Stationery Office, 1911), 2.

⁵Dena Attar, *Wasting Girls' Time: The History and Politics of Home Economics* (London: Virago, 1990); and Betül Açıkgöz, "The Advent of Scientific Housewifery in the Ottoman Empire," *Paedagogica Historica* 54, no. 6 (2018): 783–99.

⁶Susan A. Miller, "Assent as Agency in the Early Years of the Children of the American Revolution," *The Journal of the History of Childhood and Youth* 9, no. 1 (2016): 48–65.

⁷Felicity Hunt, *Gender and Policy in English Education: Schooling for Girls 1902–44* (Hemel Hempstead: Harvester Wheatsheaf, 1991); and June Purvis, "Domestic Subjects Since 1870," in *Social Histories of the Secondary Curriculum: Subjects for Study*, ed. Ivor F. Goodson (East Sussex: Falmer Press, 1986), 145–76.

⁸Elizabeth Bird, "High Class Cookery: Gender, Status and Domestic Subjects," *Gender and Education* 10, no. 1 (1998): 125; and Annmarie Turnbull, "Learning Her Womanly Work: The Elementary School Curriculum, 1870–1914," in *Lessons for Life: The Schooling of Girls and Women, 1850–1950*, ed. Felicity Hunt (Oxford: Basil Blackwell, 1987), 99.

⁹Sayaka Nakagomi, "English Middle-Class Girls' High Schools and 'Domestic Subjects' 1871–1914" (PhD diss., UCL Institute of Education, University of London, 2016).

¹⁰J.A. Banks, *Prosperity and Parenthood: A Study of Family Planning among the Victorian Middle Classes* (London: Routledge and Kegan Paul, 1954); and Frank Dawes, *Not in Front of the Servants: Domestic Service in England 1850–1939* (London: Wayland, 1973).

¹¹Moirá Donald, "Tranquil Havens? Critiquing the Idea of Home as the Middle-Class Sanctuary," in *Domestic Space: Reading the Nineteenth-Century Interior*, ed. Inga Bryden and Janet Floyd (Manchester: Manchester University Press, 1999), 104.

¹²Siân Pooley, "Domestic Servants and Their Urban Employers: A Case Study of Lancaster, 1880–1914," *The Economic History Review* 62, no. 2 (2009): 405–29.

have been at least partially a housewife, or, in other words, she would have undertaken some domestic labour herself. In contemporary culture, a link was also being forged between housework and science; historians have charted the ideology of “scientific housewifery” or “scientific motherhood”, which encouraged women to embrace science, medicine, and technology in the nineteenth century, to enhance domestic life and make it more efficient, more enjoyable, easier, and healthier for the family.¹³ Work by Judy Giles and Joanne Hollows has suggested that ideals of a modern, scientific housewife emerged in the first half of the twentieth century with the decline of domestic service.¹⁴ Given that many middle-class women would have been undertaking housework themselves in the nineteenth century, this article asserts that the cultural construction of the scientific housewife existed before the decline of domestic service. This article builds on the work of Nakagomi by considering the place of domestic subjects and science in schools as a window into a broader societal conceptualisation of housework and the housewife.

There are clear parallels in the history of these schools and the history of the middle-class woman. Domestic subjects can be seen as the institutional equivalent of housework, and the middle-class schoolgirl as the housewife. Schools and wider society are not, of course, perfect mirrors of each other. However, there is clearly a reciprocal relationship between the two. This relationship has been summarised by Felicity Hunt, who has stated: “The reflection of particular values in our schooling is one half of the equation where education \equiv society. The other half demonstrates the reinforcement of these societal values through our educational system”.¹⁵ This article pulls together the histories of the housewife and the new day schools to demonstrate how educational institutions both reflected broader cultural trends and conceptualised for themselves what it meant to do housework or be a housewife.

Referring to *the* middle-class housewife is convenient shorthand, but it is only a representation. The lived experience of domestic labour, even just within the middle class would have been immensely varied depending on wealth, status, region, house, individual preference and so forth. Marriage, however, remained the normative experience for most middle-class women.¹⁶ Furthermore, historians have established there is no *one* middle class or a definitive agreement on how it should be defined.¹⁷ Income and wealth, as factors in a household’s capacity for conspicuous consumption and servant-keeping, were and are central for determining where a person sat on the spectrum between “upper” and “lower” middle class. Nevertheless, *the* middle-class woman remains a key analytical concept in this article. The nineteenth-century expansion of the middle-class created a potent culture which communicated class-specific gendered norms through, for example, advertisements,

¹³Rima D. Apple, “Constructing Mothers: Scientific Motherhood in the Nineteenth and Twentieth Centuries,” *Social History of Medicine* 8, no. 2 (1995): 161–78; Katie Carpenter, “The Scientific Housewife: Gender, Material and the Middle-Class Kitchen in England, c. 1870–1914” (PhD diss., Royal Holloway, University of London, 2019); Açıkgöz, “Advent of Scientific,” for the relationship between science and domesticity, see also Caroline Lieffers, “‘The Present Time Is Eminently Scientific’: The Science of Cookery in Nineteenth-Century Britain,” *Journal of Social History* 45, no. 4 (2012): 935–59.

¹⁴Judy Giles, *Women, Identity and Private Life in Britain, 1900–50* (Basingstoke: Macmillan, 1995); and Joanne Hollows, “Science and Spells: Cooking, Lifestyle and Domestic Femininities in British Good Housekeeping in the Inter-War Period,” in *Historicizing Lifestyle: Mediating Taste, Consumption and Identity from 1900s to 1970s*, ed. David Bell and Joanne Hollows (Aldershot: Ashgate, 2006), 21–40.

¹⁵Felicity Hunt, “Introduction,” in *Lessons for Life: The Schooling of Girls and Women, 1850–1950*, ed. Felicity Hunt (Oxford: Basil Blackwell, 1987), xiii.

¹⁶Patricia Branca, *Silent Sisterhood: Middle-Class Women in the Victorian Home* (London: Croom Helm, 1975), 2–3.

¹⁷David Cannadine, *Class in Britain* (New Haven: Yale University Press, 1998), 60; Dror Wahrman, *Imagining the Middle Class: The Political Representation of Class in Britain, c. 1780–1840* (Cambridge: Cambridge University Press, 1995), 16.

domestic advice manuals, and education. Despite the limitations of the term “middle-class”, it denotes a system of values which were communicated through nineteenth- and early twentieth-century culture, such as self-improvement, duty, and respectability. To borrow a phrase from Eleanor Gordon and Gwyneth Nair, the “middle-classness” of women served as a “formative influence on their identity”.¹⁸

This article takes two schools as case studies: the NLCS and MHSG. Students of the day schools were of the professional middle classes whose future likely involved undertaking some domestic labour, and the schools operated as though this was the case. The curriculums, teaching methods, teachers, and students – amongst many other factors – shaped a representation of housework for the middle-class woman. Focussing on two schools and drawing upon their archives gives the opportunity to do a detailed investigation into how their teaching worked in practice, as well as how it was justified and experienced. As such, this article draws conclusions on how national cultural trends concerning housewifery manifested themselves in local school environments.

Across the period 1870 to 1914, these schools produced their own images of the housewife and housework, against the backdrop of broader societal questions about women, housework, and science. Although these images were sometimes distinct at each school, and evolved across the period, there were commonalities in their representation. By examining the teaching of science and domestic subjects, this article argues that these schools communicated their own conceptualisations of housework and thus womanhood. In these examples, the schools conceptualised housework as an intellectual activity, alongside acknowledging the practical aspects of running a middle-class household. This article is organised into three sections. The first part shows that across the period from c. 1870 to 1914, both schools increasingly incorporated practical work into the teaching of domestic subjects and science. The second section illustrates the schools’ intellectual conceptualisation of the housewife and housework. The final section asserts that the relationship forged between science and domestic subjects in schools aligned with the interests of staff and students.

Practical work in domestic subjects and science

Both the NLCS and MHSG were borne of a trend towards establishing new day schools for girls so that “the woman should have her rights as a human being to mental culture”.¹⁹ Both have been the subject of many studies.²⁰ The NLCS was an independent day school, admitting fee-paying students, who were typically the daughters

¹⁸Eleanor Gordon and Gwyneth Nair, *Public Lives: Women, Family, and Society in Victorian Britain* (New Haven: Yale University Press, 2003), 5.

¹⁹Sara Burstall, “Rise and Development of Public Secondary Schools for Girls, 1850–1910,” in *Public Schools for Girls: A Series of Papers on Their History, Aims, and Schemes of Study*, ed. Sara Burstall and M.A. Douglas (London: Longmans, Green, 1911), 1.

²⁰Josephine Kamm, *A Biography of Miss Buss & Miss Beale: How Different From Us* (London: The Bodley Head, 1958); R.M. Scrimgeour, ed., *The North London Collegiate School 1850–1950: A Hundred Years of Girls’ Education* (London: Oxford University Press, 1950); Nigel Watson, *And Their Works Do Follow Them: The Story of North London Collegiate School 1850–2000* (London: James & James, 2000); Sara A. Burstall, *The Story of the Manchester High School for Girls 1871–1911* (Manchester: Manchester University Press, 1911); *100 Years of Manchester High School for Girls 1874–1974* (Manchester: Manchester High School for Girls, 1974); and Joyce Goodman and Sylvia Harrop, “Governing Ladies: Women Governors of Middle-Class Girls’ Schools, 1870–1925,” in *Women, Educational Policy-Making and Administration in England: Authoritative Women Since 1880*, ed. Joyce Goodman and Sylvia Harrop (London: Routledge, 2000), 37–55.

of the professional middle classes. MHSG was inspired by the NLCS and was founded in 1874 by a group of prominent citizens and opened under its first headmistress Elizabeth Day. Both have been recognised as having innovative science teaching, and some students from each went on to be scientists.²¹ These institutions were to some extent shaping for themselves the image of the middle-class woman; though they did not reject Victorian concepts of domesticity, they did redefine it.²² As MHSG was built on the same model as the NLCS, it had a similar student body from North England. The curriculums of both schools offered intellectual subjects, including those that were not traditionally taught to middle-class girls or boys such as modern languages and science. As well as directly inspiring MHSG, the NLCS was influential nationally, and in 1872, the Girls' Public Day School Company was established with the aim to provide more schools of this type. By 1900, the company had 32 schools with seven thousand students.²³ As these were *day* schools, their relationship with the home was distinct to boarding schools; after all, students were expected to return home at the end of the day.

In the NLCS's infancy, domestic economy was a compulsory subject. Surviving examiner reports and test questions demonstrate that "laws of health" and "domestic economy" were taught by at least the 1870s. Nakagomi has charted a three-stage model on the development of domestic subjects. The first stage roughly from 1871 saw domestic subjects included as compulsory, individual subjects.²⁴ An exam paper from Easter 1875 reveals that the content of these classes was highly theoretical. For example, questions included: "Distinguish between fibrin, albumen, and gelatine; and state why beef and mutton are more nutritious than veal and lamb" and "Show how imperfect drainage and impure water produce disease".²⁵ Evidently the nutrition of food and drainage have clear parallels to household tasks concerning family health. However, the practicalities of domestic labour are only implicit. Other questions asked for more explicit practical instructions. For example: "What are the effects of breathing impure air? Give practical directions for ventilating ordinary bedrooms and dwelling-rooms". The instruction to "give practical directions" may allude to the possibility that it was assumed the students would be giving said directions to domestic servants. Nakagomi counted the frequency of the topics that appeared in domestic economy examination papers between 1874 and 1903, demonstrating that they were most frequently about cookery. Questions about laundry and infant care were in the minority, which Nakagomi suggests may be owing to the assumption that they would be taken care of by domestic servants.²⁶

There is no evidence at this point that these classes had a practical element. In other words, students were not required to imitate domestic labour in classes or for assessment. Giving evidence to the 1868 Taunton Commission, Buss was asked if she felt domestic economy should be taught in schools. She replied, "The theoretical part. Of course a certain amount of the practical part must be carried out at home".²⁷ Buss did not reject

²¹Marelene Rayner-Canham and Geoff Rayner-Canham, *Chemistry Was Their Life: Pioneer British Women Chemists, 1880–1949* (London: Imperial College Press, 2008).

²²Carol Dyhouse, *Girls Growing up in Late Victorian and Edwardian England*, 2013 ed. (London: Routledge, 1981), 59.

²³Gillian Avery, *The Best Type of Girl: A History of Girls' Independent Schools* (London: André Deutsch, 1991), 76.

²⁴Nakagomi, "English Middle-Class," 223–7.

²⁵Domestic Economy Exam Questions, Easter 1875, Insert into *N.L.C.S.L. Special Examinations*, bound volume, North London Collegiate School Archive (hereafter "NLCSA").

²⁶Nakagomi, "English Middle-Class," 109.

²⁷*Schools Inquiry Commission. Vol. V. Minutes of Evidence Taken Before the Commissioners, Part II.* (1868), Cd. 3966-V, 262.

the necessity for practical training in domestic labour; instead she felt it was better suited for a home environment. Elizabeth Day, the first headmistress of MHS, expressed a similar view whilst giving evidence to the Royal Commission on Secondary Education in 1895. There is no evidence that MHS gave any space to domestic subjects in its early years. Day was described in a parliamentary report of 1895 as holding the view “that such subjects had better be learnt after a girl has left school”.²⁸ This is in concurrence with comments by Josephine Kamm who has observed that many people thought teaching domestic subjects was unnecessary because middle-class girls “might be expected to learn all the essentials at home”.²⁹ Indeed, the day school was built on the principle that the students would return to their home mid-afternoon.

In January 1876, practical domestic work was incorporated into the NLCS’s teaching when optional cookery classes were started.³⁰ Initially the classes were taught by observation only, but by the 1890s there were two lessons a week: one a demonstration, and the other a practical.³¹ By this point, from roughly the 1880s, the NLCS was in the second stage of Nakagomi’s model: optional classes. By 1904, the NLCS was offering specialist “housewifery” classes, as evidenced by a surviving exercise book from a former student, Violet Steadman. This “housewifery” class was most likely a sub-class of the domestic economy course established in that year, marking the third stage of Nakagomi’s model: optional specialist domestic subjects courses for older students.³² Students on this course studied other subjects at half-time, with the remainder spent on domestic economy. In contrast to the exam questions from the domestic economy classes of the Buss era, the exercise book shows a marked emphasis on practical work rather than theoretical. There is, for example, a section on “Mending” which outlines how to mend clothes of different materials; samples of fabric are affixed to the book.³³

The term “housewifery” implies a more practical course of study than the “domestic economy” classes under Buss. In a report commissioned by the Education Department in 1897, Margaret Pillow defined “domestic economy” as theoretical.³⁴ The term “domestic economy” can be traced back to the early modern period, when “oeconomy” conceptualised domestic labour as rational and efficient, and centred on masculine authority.³⁵ Buss’s early domestic economy classes drew on this language of “economy” which defined women’s domestic work as distinct from practical labour and bolstered by masculine authority. According to Nakagomi, terms such as “housewifery”, “housecraft”, and “home craft” first emerged around 1900.³⁶ The shift towards “housewifery” was perhaps influenced by state involvement in education, and public scrutiny on housewives. Fears around the turn of the century that the race was physically deteriorating had instigated national interest in the health of men and boys. Since women were responsible

²⁸ *Reports of the Royal Commission on Secondary Education: Vol. VI Reports of Assistant Commissioners on the Counties of Bedford, Devon, Lancaster (the Hundreds of Salford and West Derby), Norfolk* (1895), C.7862-VI, 286.

²⁹ Josephine Kamm, *Hope Deferred: Girls' Education in English History* (London: Methuen, 1965), 217.

³⁰ *Our Magazine*, (December 1875), 57, NLCSA.

³¹ “Cookery Class,” *Our Magazine*, (April 1893), 7, NLCSA.

³² See note 24 above.

³³ Housewifery Exercise Book of Violet Steadman, 1904, RS 4iv, NLCSA.

³⁴ Margaret Eleanor Pillow, “Domestic Economy Teaching in England,” in *Special Reports on Educational Subjects* (1897) c. 8447, 172.

³⁵ Karen Harvey, *The Little Republic: Masculinity and Domestic Authority in Eighteenth-Century Britain* (Oxford: Oxford University Press, 2012).

³⁶ Nakagomi, “English Middle-Class,” 229.

for food and domestic hygiene, they were considered culpable in the supposed degeneration of the race, prompting national attention on the education of the housewife.³⁷ Whatever the reason for the shift in terminology, the content and title of these classes indicates an institutional acknowledgement of the practical realities of domestic life for the middle-class woman.

Multiple pages in Steadman's exercise book refer to the management of servants. One page lists instructions on "Engaging Servants". Others outline the daily routine of a servant, and list the separate duties of a cook and a housemaid. This content on the management of domestic servants is alongside a book filled with practical instructions on how the future middle-class women could complete domestic tasks herself. Thus, the impression is given that the housewife doing her own practical work is not in contradiction with being wealthy enough to have servants. Indeed, it were expected for even the wealthiest mistresses to have a detailed practical knowledge of household tasks, even if she were not doing it herself. As one domestic advice writer put it, "[t]he mistress should be able to perform every single detail of household work herself".³⁸ Steadman's textbook suggests the domestic subjects course running at this time reflected the possibility of students potentially having servants in their future, but still having a comprehensive knowledge of the practicalities of domestic labour.

Whilst MHSG had little space for domestic subjects under Day's leadership, under Sara Burstall's leadership (1898–1924) MHSG reformed its teaching. Amongst Burstall's many changes were the opening of a Department of Housewifery in 1901. The school became the first to submit students, aged 16 to 18, to the housecraft certificates issued by the Joint Matriculation Board of the Northern Universities.³⁹ This parallels changes that had taken place in the late nineteenth and early twentieth centuries which saw the professionalisation of domesticity through educational institutions.⁴⁰ By November 1910, the content of the two-year housewifery course included laundry, hygiene, household management, dress making, needlework, and arithmetic.⁴¹ In 1911 the school acquired a cottage for students on the housewifery course to provide a more authentic domestic environment.⁴²

Whilst the day schools were aiming to offer girls an academic schooling of the same standard of boys, they were not intended to be direct replicas. Science was included in the curriculum of the NLCS from its inception, but it was not considered a prestigious subject in the equivalent schools for boys.⁴³ Traditionally, boys' public schools marginalised science in favour of the classics, which were deemed to develop character in young

³⁷Vanessa Heggie, "Domestic and Domesticating Education in the Late Victorian City," *History of Education* 40, no. 3 (2011): 273–90; Anna Davin, "Imperialism and Motherhood," *History Workshop* 5 (1978): 9–65; Bird, "High Class Cookery;" and Diana E. St. John, "Educate or Domesticate? Early Twentieth Century Pressures on Older Girls in Elementary School," *Women's History Review* 3, no. 2 (1994): 191–218.

³⁸Mrs Eustace [Hallie Kinnick] Miles, *The Ideal Home and Its Problems* (London: Methuen, 1911), xvi.

³⁹"Housecraft Education: Manchester Girls' High School's Success," August 1911, NA 1911 G1, Manchester High School for Girls' Archive (hereafter "MHSGA").

⁴⁰Nancy L. Blakestad, "King's College of Household & Social Science and the Household Science Movement in English Higher Education, c. 1908–1939" (Phd diss., University of Oxford, 1994); and Bridget Egan and Joyce Goodman, "Household and Domestic Science: Entangling the Personal and the Professional," *History of Education* 46, no. 2 (2017): 176–92.

⁴¹Syllabus of Work in Housewifery Forms V and VI, November 1910, Misc 1910 G1, MHSGA.

⁴²"A.T.P.," "Gap Cottage," *The Magazine of the Manchester High School* 13, no. 33 (June 1911), 29, MHSGA.

⁴³This was also the case in the US: see Kim Tolley, "Science for Ladies, Classics for Gentlemen: A Comparative Analysis of Scientific Subjects in the Curricula of Boys' and Girls' Secondary Schools in the United States, 1794–1850," *History of Education Quarterly* 36, no. 2 (1996): 129–53.

men. This was in part owing to a class prejudice against science; there was “a gentlemanly mistrust of studies associated with trade and engineering”.⁴⁴ In 1865, Buss described the courses of natural science, which included “properties of matter, the law of motion, the mechanical powers, simple chemistry and electricity, with the outlines of geology, botany, natural history, and astronomy”.⁴⁵ The precise nature of these science classes is not wholly clear, but in statements given to the Taunton Commission, Buss explained of botany, “we try to induce the pupils to collect specimens of their own”.⁴⁶ It is unclear how much the students conducted experiments themselves in the classes, but Buss described that “[e]verything is illustrated by experiment or diagrams, as far as possible”.⁴⁷ The inclusion of science, at a time when it was not a well-established aspect of the intellectual culture of boys’ schooling, is further evidence that these institutions were making their own definition of what an intellectual culture should look like for the middle-class woman.

Paralleling changes in domestic subjects, the teaching of science became increasingly practical. This is particularly clear under the leadership of Buss’s successor, Sophie Bryant, who was headmistress from 1895 to 1918. In the 1890s, Bryant and the science teacher Edith Aitken reformed science teaching at the school. In a lecture given in 1898, Bryant outlined the time spent on science. She described the youngest students (aged 12 to 13) dedicating two hours a week on science, progressing to eight hours a week in Form VI (aged 17 to 19). Chemistry was the most preferable science to specialise in but botany or biology would be allowed for girls with a certain aptitude for them.⁴⁸ A surviving science exercise book from 1912, belonging to chemistry student Lucy Hill, shows clear evidence of students’ engagement with the laboratory themselves. For instance, content included descriptions of experiments performed by the students, and diagrams of scientific equipment handled and used by them.⁴⁹

MHSG also overhauled its science teaching in its first decade. As Suzanne Le-May Sheffield has noted, lack of equipment and limited school hours complicated the teaching of science at British day schools.⁵⁰ Students could not undertake practical work until the necessary spaces and equipment were available. In 1881 the school moved buildings and subsequently acquired a science laboratory. Around the same time, the science teaching was reformed. In an outline of the proposed changes, Day recommended two hours a week on plants, animals, and natural philosophy to girls aged 11 to 13, moving on to an optional specialist course from the age of 14, of experimental physics, chemistry, botany, and zoology, geography and physiography,

⁴⁴Quote from Colin Shrosbree, *Public Schools and Private Education: The Clarendon Commission 1861–64 and the Public Schools Acts* (Manchester: Manchester University Press, 1988), 51; On boys and science, see also Anne Digby and Peter Searby, *Children, School and Society in Nineteenth-Century England* (London: The Macmillan Press, 1981); and A.J. Meadows and W.H. Brock, “Topics Fit for Gentlemen: The Problem of Science in the Public School Curriculum,” in *The Victorian Public School: Studies in the Development of an Educational Institution*, ed. Brian Simon and Ian Bradley (Dublin: Gill and Macmillan, 1975), 95–114.

⁴⁵*Schools Inquiry Commission. Vol. V. Minutes of Evidence Taken Before the Commissioners, Part II.* (1868), Cd. 3966-V, 265–66.

⁴⁶*Ibid.*, 266.

⁴⁷*Ibid.*

⁴⁸Mrs Bryant, “The Teaching of Science in Schools,” paper given to the Conference of Head Mistresses and University Teachers of Women Students, 7–8 October 1898, box title: Sophie Bryant Notes, archives b2, NLCSA.

⁴⁹Chemistry Exercise Book of Lucy Hill, 1912, box title: Hill Family, archives d4, NLCSA.

⁵⁰Suzanne Le-May Sheffield, *Women and Science: Social Impact and Interaction* (Santa Barbara: ABC-CLIO, 2004), 98.

or cosmic physics and astronomy. Older girls, aged 16 to 17, studied elementary animal physiology and laws of health.⁵¹

In addition, a new biological laboratory was opened at MHSG the same year as the cooking school, in 1905.⁵² As Mary Waring has argued, by 1900 it was generally believed that learning science was best taught with practical work carried out by the students.⁵³ This is evident in a photograph of the biological lab, printed in Burstall's history of the school. The students are sat around a central table with biological specimens and equipment. The cabinets at the back of the room are filled with scientific glassware.⁵⁴ Clearly the teaching space was designed for frequent student practical work and stocked with the necessary equipment. Thus, in both domestic subjects and science, teaching at NLCS and MHSG became increasingly practical. This has strong parallels with the work of scholars such as Moira Donald and Sian Pooley who have demonstrated the practical reality of domestic labour for middle-class women.⁵⁵ If these schools had been attempting to avoid practical work, especially in domestic subjects, to maintain classed ladylike behaviour, this had certainly subsided by the Edwardian period.

The practical and scientific housewife

So far, this article has demonstrated that practical work was increasingly incorporated into the teaching of domestic subjects and science across the period 1870 to 1914. It has also suggested that this is a reflection of the reality of domestic labour for middle-class women. To further examine how housework was conceptualised, it is necessary to consider how the schools publicly justified and presented the two subjects. For example, Bryant observed in a 1912 paper to the College of Preceptors: "What we want is the housewife trained to the most attentive observation of the effect she is producing throughout every operation that she undertakes". She continued: "Also, she will stand a fair chance of growing up with a logical mind as capable of inductive reasoning on the problems of experience in the social world as if she had spent the same time working in the science laboratory".⁵⁶ Bryant presented a logical and meticulous housewife; this practical work was geared towards training the future housewife's intellectual faculties. In referring to "the problems of experience in the social world", Bryant may have been alluding to the role of middle-class woman in philanthropy. For example, some middle-class women served as social observers and reformers to working-class women – another occupation in which the middle-class woman could assert her domestic expertise over the working-class woman.⁵⁷

⁵¹Elizabeth Day, "As to the Present Arrangements for the Teaching of Science in the School," 22 April [1882], Governors' Meetings July 1881–July 1883, 8–10, MHSGA.

⁵²Editorial, *The Magazine of the Manchester High School* 12, no. 19 (April 1905), 1, MHSGA.

⁵³Mary Waring, "To Make the Mind Strong, Rather than to Make It Full": Elementary School Science Teaching in London 1870–1904," in *Social Histories of the Secondary Curriculum: Subjects for Study*, ed. Ivor F. Goodson (East Sussex: Falmer Press, 1985), 137.

⁵⁴Burstall, *The Story*, 186.

⁵⁵Donald, "Tranquil Havens?" and Pooley, "Domestic Servants."

⁵⁶Mrs Bryant, "Science and the Home Arts," *Educational Times*, December 1912, 11, box title: Sophie Bryant Notes, archives b2, NLCSA.

⁵⁷Jane Lewis, *Women and Social Action in Victorian and Edwardian England* (Aldershot: Elgar, 1991); Jane Lewis, *The Politics of Motherhood: Child and Maternal Welfare in England, 1900–1939* (London: Croom Helm, 1980); and Ruth Livesey, "Reading for Character: Women Social Reformers and Narratives of the Urban Poor in Late Victorian and Edwardian London," *Journal of Victorian Culture* 9, no. 1 (2004): 43–67.

There was of course a relationship between science and domestic subjects; after all, domestic subjects were sometimes called “domestic science”, albeit with no one clear definition.⁵⁸ The association of science and domesticity was not novel to this period. Women’s traditional place as caregivers to the family had forged a domestic association with medicine and chemistry in the early modern period.⁵⁹ However, the connection between domesticity and science crystallised in the nineteenth century, “when significant features of the relationship between contemporary science and culture first assumed form”, as science became more prestigious and popular.⁶⁰ Furthermore, the association of domesticity with science could provide opportunities for women. For example, Joanna Behrman has shown that home economics was an important site of agency for women to appropriate scientific subjects in the United States in the first half of the twentieth century.⁶¹ As aforementioned, the association between domestic subjects and science in formal education for girls was especially acute in England following national attention on mothers in the late nineteenth century.

There were certainly similarities between MHSG and the NLCS’s approaches to the two subjects, but their views were not identical. The uncertainty over their relationship was neatly summarised by Bryant in her 1912 paper:

Is science, as the exposition of truth in due order of development, to be used for the purpose of secondary education; or shall the activity of girls in the laboratory be regulated by inquiry into important and interesting problems arising out of desire to penetrate the mysteries of diet, cooking, washing and household cleaning?⁶²

In other words, should science be taught as science with the intention of developing the intellectual faculties of the girls? Or should it be taught specifically with domestic labour in mind? No consensus on the answer to the question was ever reached. Confusion peaked by the late Edwardian period, at which point the Board of Education published two reports dealing with the subject: the *Interim Memorandum on the Teaching of Housecraft Girls’ Secondary Schools* (1911) and the *Report of the Consultative Committee on Practical Work in Secondary Schools* (1913). Both documents acknowledged the wide range of opinion on the matter, and the latter report recommended that domestic subjects should be preceded by two years of study of pure science.⁶³

Bryant and Burstall took their own distinct approaches. Catherine Manthorpe has shown that Bryant’s was the more academic, whereas Burstall’s was more practical.⁶⁴ In Bryant’s view, “Extrinsic underlying motives are not needed by the average girl as a stimulus to interest” but she did believe that the application of science to practical matters was essential. In her recommendations, “[t]he science foundation must be

⁵⁸Catherine Manthorpe, “Science or Domestic Science? The Struggle to Define an Appropriate Science Education for Girls in Early Twentieth Century England,” *History of Education* 15, no. 3 (1986): 200.

⁵⁹Lynette Hunter, “Women and Domestic Medicine: Lady Experimenters, 1570–1620,” in *Women, Science and Medicine 1500–1700*, ed. Lynette Hunter and Sarah Hutton (Thrupp: Sutton, 1997), 89–107; and Londa Schiebinger, *Nature’s Body: Sexual Politics and the Making of Modern Science* (London: Pandora, 1993), 113.

⁶⁰Bernard V. Lightman, “Introduction,” in *Victorian Science in Context* (Chicago: University of Chicago Press, 1997), 3.

⁶¹Joanna Behrman, “Domesticating Physics: Introductory Physics Textbooks for Women in Home Economics in the United States, 1914–1955,” *History of Education* 46, no. 2 (2017): 193–209.

⁶²Bryant, “Science and the Home Arts,” 7.

⁶³*Interim Memorandum*, 52.

⁶⁴Catherine Manthorpe, “Science Education in the Public Schools for Girls in the Late Nineteenth Century,” in *The Private Schooling of Girls*, ed. Geoffrey Walford (London: Woburn Press, 1993), 56–78.

science”⁶⁵ but schools should “make the domestic arts teaching itself more scientific”.⁶⁶ Science, in her view, should not be domesticated, but domestic subjects could be made more scientific.

This was clear in the practical arrangements of the course of study for students on the domestic arts course at the NLCS. A booklet outlining the “Summary of Organisation and Schemes of Study”, pasted into a volume about the school from 1909 to 1910, describes the course of study for cookery, housewifery and laundry, dressmaking and millinery, hygiene, and household arithmetic. These classes were presumably part of the domestic economy course instigated in 1904, which by 1906 was renamed “Domestic Arts”. In the outlined programme for cookery, and housewifery and laundry, classes were split between work in the laboratory, taught by then-science teacher Rose Stern, and work in the classroom by domestic subjects’ teacher Charlotte Macrae. For instance, for household work, Miss Macrae taught “Cleaning and Care of the Home” under the subtitle “Kitchen Work”. Miss Stern taught the corresponding “Laboratory Work” and “Science of Cleaning”, which included: “Removal of stains caused by-(1) Action of atmosphere on metal/(2) Action of acids from fruits on metals and fabrics”.⁶⁷

Historians of education have suggested that domestic subjects were deliberately made more scientific to raise their status. For example, according to Elizabeth Bird, “[i]f it were necessary to elevate the status of these subjects to make them acceptable to all classes then they would have to become scientific”.⁶⁸ As Annmarie Turnbull has stated, whilst the “science of cleansing” might be taught to the middle-class girl, the working-class girl learned “laundry work”.⁶⁹ However, it should also be noted that the links between the kitchen and the laboratory as at the NLCS were also reflective of a broader cultural trend communicated to middle-class women. Countless domestic advice manuals used the imagery of the middle-class kitchen as the scientific laboratory. For instance, Mrs Beeton, in her *Book of Household Management* (1861), described the kitchen as “the great laboratory of the household”.⁷⁰ A similar teaching strategy was used at MHSG, where they employed “a Science Mistress (Cambridge Tripos) who knows some Housewifery and a Domestic Arts Mistress who knows some Science”.⁷¹ It is, after all, in the capabilities of a school to offer household training that is literally in a kitchen and a laboratory, which was of course not feasible in the standard middle-class home. In these examples, the schools can be thought of as both reflecting and projecting a literal manifestation of the cultural trend associating the domestic kitchen with the scientific laboratory. These examples point to the importance of examining educational institutions as spaces in which broader cultural trends take shape in unique forms.

To Burstall, practical science meant application to the household. Burstall was heavily influenced by Professor Arthur Smithells (1860–1939), a chemist who has been described as a “key catalyst” in the domestic science movement.⁷² In Burstall’s words, Smithells’

⁶⁵Bryant, “Science and the Home Arts,” 8.

⁶⁶Ibid., 11.

⁶⁷“Housewifery and Laundry,” booklet pasted into *North London Collegiate School 1909-1910: Summary of Organisation and Schemes of Study*, bound volume, box title: Curricula, a1, NLCSA.

⁶⁸Bird, “High Class Cookery,” 125.

⁶⁹Turnbull, “Learning her Womanly Work,” 99.

⁷⁰Isabella Beeton, *The Book of Household Management* (London: Ward, Lock and Co., 1879), 23; For further examples of this metaphor, see Carpenter, “The Scientific Housewife,” 46–91.

⁷¹*Report of the Consultative Committee on Practical Work in Secondary Schools* (1913), Cd. 6839, 304.

⁷²Blakestad, “King’s College,” 93.

views could be summarised as “Physics for girls should be physics for the household”.⁷³ This meant domesticating or feminising science teaching to appeal to female students. Smithells endorsed their teaching as one subject, with the intention to prepare girls for domestic life. Burstall’s housewifery course was not compulsory for all girls, and she acknowledged that some parents may not have wanted to pay for a course when it could be taught at home. Nevertheless she believed that it was her responsibility to prepare girls for domestic life, estimating in 1909 that “say 55%” of her students were destined to stay at home in future life.⁷⁴ Thus, Burstall made science compulsory for all older girls, on the basis that the science classes would provide some practical teaching that was not accessible in other subjects: “The Science, however, could be, and was, enforced, and it was hoped by this means to equip the girls much better for home duties even if they did no practical work in the school”.⁷⁵ The lack of practical experience in domestic subjects could be substituted for practical science with a domestic slant, as she thought “if science was coloured by reference to the needs of the home the girls would learn in school the principles of Domestic work”.⁷⁶ This was a catch-all policy, by which every girl would be exposed to the practical work that would prepare them for home life. Although there were clear differences in Bryant and Burstall’s views, they both subscribed to the view that science could strengthen the intellectual faculties of the girls (whether taught domestically or not), and that these qualities were essential for running a home. They defined housework as a difficult task that required intellect to be completed with success.

The value of science was not seen as being in the knowledge acquired. In a speech of 1898 to the Association of Assistant Headmistresses, Edith Aitken outlined her belief that the teaching of science “supplies a quite special form of training, a kind of mental gymnastic essential to intellectual symmetry”.⁷⁷ Although Aitken noted that “some information” had value, the primary use of science teaching was not to gather knowledge. The principles instilled by science teaching could be achieved by *doing* science. For instance, Aitken highlighted botany for the skills it inculcated in observation by examining specimens. In her words: “In the earliest stages it is treated as a subject of pure observation, and is so far perfectly satisfactory. Classification follows and is undeniably an excellent logical exercise”.⁷⁸ Observation, as with classification, was deemed to be a vital skill in developing the reasoning faculties. Whilst botany was undoubtedly gendered as a “female science”, in this context it was not justified because of its gendered connotations.⁷⁹

The development of intellect in students was linked to their moral growth. To Aitken, science had a moral purpose in teaching students about the principle of causation. In Aitken’s view, science provided “[m]oral training in neatness, thoroughness and accuracy, with recognition of the inevitableness [*sic*] of consequences”. The importance of practical science

⁷³Sara Burstall, *English High Schools for Girls* (London: Longmans, 1907), 11.

⁷⁴*Report of the Consultative Committee*, 302.

⁷⁵*Ibid.*

⁷⁶*Ibid.*, 301.

⁷⁷Miss Edith Aitken, “The Teaching of Science in Schools as a Method of Induction from the Concrete,” a paper read at the Annual Meeting of the Association of Assistant Headmistresses, January 1898 (London: Published at the office of *The Educational Review*, MDCCCXCVIII), 6, NLCSA.

⁷⁸Aitken, “Teaching of Science,” 3.

⁷⁹Ann B. Shteir, “Gender and ‘Modern’ Botany in Victorian England,” *Osiris* 12 (1997): 29.

is very great on the *moral* side: partly because it is almost the only means to bring a child into direct personal communication with Nature, and partly because the rewards and punishments are so immediate, and so clearly connected with the nature of the action.

“Slovenliness and forgetfulness”, Aitken continued, “are punished logically on the spot, and it should be one chief aim of the teacher to make this clearly felt”.⁸⁰ Aitken’s reference to slovenliness and forgetfulness strikes a chord with criticisms aimed at supposedly incompetent and disinterested housewives in this period. This reached its boiling point in the *Report of the Inter-Departmental Committee on Physical Deterioration* in 1904 which described British housewives as “tainted with incurable laziness and distaste for the obligations of domestic life”.⁸¹ Aitken’s rationale for the moral benefits of science can be thought to some extent as a reflection of the anxiety surrounding mothers in the fin-de-siècle.

Interpretations of Burstall’s reforms at MHSG and specifically the establishment of the housewifery course have been varied. Sara Delamont has suggested that Burstall’s introduction of a housewifery course was controversial, noting that “[i]t was either a sensible adjustment to the interests of non-academic girls or a betrayal of everything feminist educators had spent fifty years campaigning to achieve”.⁸² Feminist educators were, on the whole, against the academic teaching of domestic subjects, which were deemed to lower the standard of education of girls and women.⁸³ Whatever the interpretation of Burstall’s reforms, she certainly represented housewifery as a professional vocation that required academic study and was formally recognised by universities. This paralleled change in higher education. For instance, from 1908, “Household and Social Science” courses were opened at King’s College for Women, which later led to the establishment of King’s College of Household and Social Science.⁸⁴ According to Burstall, if domestic subjects were treated as any other subject, it would raise their status in the eyes of the students:

if . . . the domestic arts occupy an honourable place in the school curriculum, if the teachers of cookery, laundry, and dressmaking are on a level personally and officially with the other assistant mistresses, if there are opportunities of distinction, prizes, scholarships, things to do for the school, in this department, then *all* the girls realise, even if they are not in the department themselves, that these subjects are essential parts of a woman’s education, honourable, and honouring those who pursue them.⁸⁵

The admission of girls to competitive examinations, which paralleled widening opportunities in higher education and employment in the same field, saw practical housewifery occupy a place in the curriculum that does not seem so contradictory to the school’s intellectual ethos and history.

Although this was not so explicitly the policy at the NLCS, clearly domestic subjects were incorporated into the general ethos of the school. As Gillian Sutherland has shown,

⁸⁰Aitken, “Teaching of Science,” 6.

⁸¹*Report of the Inter-Departmental Committee on Physical Deterioration. Vol-I- Report and Appendix* (1904), Cd. 2175, para. 216, 40.

⁸²Sara Delamont, “Burstall, Sara Annie (1859–1939),” *Oxford Dictionary of National Biography*, <https://www.oxforddnb.com> (accessed July 28, 2020).

⁸³Dyhouse, *Girls Growing Up*, 165–6.

⁸⁴Blakestad, “King’s College;” and Egan and Goodman, “Household and Domestic.”

⁸⁵Burstall, *English High Schools for Girls*, 197–8.

it is important to be attentive to the interplay between the formal and informal modes of education in institutions.⁸⁶ The provision for domestic subjects went beyond formal classes. For instance, the students of the cookery class regularly provided the refreshments for the annual Founder's Day celebration, and staff organised competitions for the students, such as a "Curry Competition" in 1896 which was judged by a panel of four judges.⁸⁷ Such events suggest that although teaching space to domestic subjects might have been limited in comparison to other subjects, they were not marginalised in the school's culture. The showcasing of students' cookery on public occasions contradicts the idea that it was degrading for the middle-class lady to be seen undertaking domestic labour. In these events, the students' cookery was a point of pride and celebration within the school's community.

As early as 1878, the NLCS was seemingly promoting the career options available to students of domestic subjects outside the home. For instance, an article was reprinted from *The Englishwoman's Gazette* into the school magazine *Our Chronicle*, which described employment opportunities for a lecturer in cookery.⁸⁸ As James Mangan has pointed out, school magazines are official records and thus "[perpetuate] established values rather than [challenge] them".⁸⁹ Thus, in this example, the NLCS was encouraging students of domestic subjects to pursue a career. It has previously been assumed that domestic subjects were aimed at those who were not likely to have a career. In Ailsa Yoxall's words, in schools "where the ideal was purely intellectual, backward girls only were instructed in the domestic arts".⁹⁰ To the contrary, the presence of such an article in the school magazine suggested that domestic subjects could lead to a career. In data quantified by Nakagomi, out of 155 students from the housewifery course at MHSG between 1909 and 1914, 99 pursued the subject further, such as study at training colleges, gaining certificates, and entering related occupations.⁹¹ In this respect, there was not such a clear-cut dichotomy between "intellectual" subjects and domestic subjects, since such specialist courses may have led to professions and further study for many students. The practical content of both science and domestic subjects was inculcated into a culture of intellectual domesticity that opened up employment opportunities for either route. By examining the justification and presentation of the two subjects within the schools, the schools' positive and celebratory attitude towards domestic subjects is clear. Far from being marginalised, domestic subjects were celebrated in the schools' culture, and recognised as a viable career option.

Teacher and student interests

Having demonstrated the positive and intellectual conceptualisation of housework, which acknowledged the practical reality of domestic labour, attention now turns to

⁸⁶Gillian Sutherland, "Self-Education, Class and Gender in Edwardian Britain: Women in Lower Middle Class Families," *Oxford Review of Education* 41, no. 4 (2015): 518–33.

⁸⁷"Cookery Class – 'Curry' Competition," *Our Magazine*, (November 1896), 102–3, NLCSA.

⁸⁸"Instruction in Cookery – an Employment for Ladies," *Our Magazine*, (April 1878), 30, NLCSA.

⁸⁹J.A. Mangan, *Athleticism in the Victorian and Edwardian Public School: The Emergence and Consolidation of An Educational Ideology* (London: Frank Cass, 2000), 243.

⁹⁰Ailsa Yoxall, *A History of the Teaching of Domestic Economy* (London: Association of the Teachers of Domestic Subjects, 1914), 46.

⁹¹Nakagomi, "English Middle-Class," 242.

how firstly staff, and secondly students, experienced and contributed to this representation. The public justifications of particular subjects may not necessarily have coincided with the headmistresses' and teachers' personal beliefs and agendas. As Carol Dyhouse has explained, feminist groups campaigning for women's education often used the justification that it would make for better wives and mothers.⁹² The personal opinions of educators, however, could be much more complex. Teachers, for instance, had their own agendas in promoting certain subjects in a particular way. For example, in describing the intellectual effects of the natural sciences, Aitken was promoting her own personal and professional accomplishments. She was one of the new professional headmistresses of this era, becoming, in 1902, headmistress of Pretoria High School for Girls in South Africa.⁹³ Her descriptions of science teaching thus mirrored the values important to her own professional role. As Joyce Senders Pederson has argued, new schools created the social type of the professional female teacher. She suggests that headmistresses rested their claim to elite status on their intellectual accomplishments, rather than social characteristics, and new public schools for girls served "almost as an institutional analogue to what here is termed the professional ideal".⁹⁴ Indeed, as June Purvis has pointed out, "[a]ny classification of the new academic schools cannot be neat; many of the schools had their own particular ethos, often shaped by the personality of the headmistress".⁹⁵ The intellectual values of these schools were projecting an image of the new professional headmistress and teacher.

This was also the case for the domestic subjects' teacher. Annmarie Turnbull has pointed out that this new occupation was a paradox as it "[reinforced] ideas of women's home-centeredness and dependency", but still "provided some women with the opportunity to expand their horizons outside the household".⁹⁶ At MHSG, Miss Blanche Henry, domestic subjects teacher, wrote an article in the school magazine about the importance of domestic economy. She asked: "Now what is the career that awaits the majority of girls? Is it not something to do with the home?" She acknowledged that increasingly male professions were opening up to women,

But, speaking generally, I am right in saying that home life is the life that awaits the large majority of girls after leaving school. Surely then that education is the best education which has reference to, and prepares them for that home life. In every vocation there must be the preliminary training to qualify for that vocation.⁹⁷

In emphasising the importance of domestic subjects, Henry was naturally bolstering her own role. And yet, the domestic subjects' teacher was, to quote Burstall, "not a woman leading the normal ordinary woman's life".⁹⁸ Work by historians of women and education has emphasised how women were able to draw power from the home to pursue

⁹²Dyhouse, *Girls Growing Up*, 139–75.

⁹³Barbara E. Megson, "Aitken, Edith (1861–1940)," *Oxford Dictionary of National Biography* <https://www.oxforddnb.com> (accessed July 28, 2020).

⁹⁴Joyce Senders Pederson, "The Reform of Women's Secondary and Higher Education in Nineteenth Century England: A Study in Elite Groups" (PhD diss., University of California, 1974), 281.

⁹⁵June Purvis, *A History of Women's History Education in England* (Milton Keynes: Open University Press, 1991), 76.

⁹⁶Annmarie Turnbull, "An Isolated Missionary: The Domestic Subjects Teacher in England, 1870–1914," *Women's History Review* 3, no. 1 (1994): 82.

⁹⁷Blanche Henry, "The Importance and Growth of the Teaching of Domestic Economy in Schools," *The Magazine of the Manchester High School* 2, no. 6 (November 1900), 106, MHSGA.

⁹⁸Burstall, *English High Schools for Girls*, 197.

educational and professional opportunities.⁹⁹ In this case, by promoting her subject within her own school, Henry had found her place to assert her own professional and intellectual achievements. The conceptualisation of the housework served to reflect the values of the new professional woman. These institutions shaped the representations of different types of women: the housewife and the school teacher.

Fragments from school magazines give some insight into how students internalised the environment that was created for them. Whilst school magazines were unlikely to directly contradict established school values, they were also a means for students to articulate their educational experience in their own words. Magazines can thus be used to investigate how students experienced and framed changes in the school curriculum. For example, when practical domestic work was first incorporated into the NLCS's teaching in January 1876, an anonymous student writer for *Our Chronicle* wrote about the rationale for these classes: "When mamma goes away for a week or two, her alegbro-hydrostatical daughter, now, with soups, entrées, and omelettes at the fingers' ends, will no longer in agonizing despair, address cook with the words, 'What *are* we to have for dinner?'"¹⁰⁰ It is unsurprising that the student magazine, produced with adult supervision, is in line with the school's official policy on domestic subjects. In this instance, it seems the classes were promoted as affording some balance in a girls' education; some practical knowledge should be alongside the academic studies. It has the additional effect of giving the "alegbro-hydrostatical daughter" some intellectual autonomy over the servant in the home, in the absence of the mother. Superior practical knowledge was an important class signifier in the middle-class home.

In June 1907, an anonymous NLCS student wrote a defence of the perceived inferiority of domestic subjects amongst her peers. The author quoted fellow students: "Oh, yes, I'd love to be in the Technical; the girls don't do any work, and have a splendid time." In her defence of the work required of "The Technical" (which was by this point the predominant term for the specialist domestic subjects course at the NLCS), she highlighted the difficulty and technicality of the exam questions – such as "What per cent of nitrogenous material is contained in a potato?"¹⁰¹ However, this does not necessarily need to be read as a form of successful social control, in which the girls' identities were shaped by the school and its housewifery course. Instead, as Susan Miller has asserted, "we should be attentive to the ways in which children willingly conform to adult agendas, not necessarily because youth acquiesce to power, but because their interests often align with those promoted by adults."¹⁰² Similarly, Mona Gleason has warned against "pitting adult perspectives against those of children and youth", instead advocating for a more complex understanding of agency.¹⁰³ In school magazines, students can be seen to be articulating their engagement with domestic subjects on their own terms. Examples such

⁹⁹Such as Anne Clendinning, *Demons of Domesticity: Women and the English Gas Industry, 1889–1939* (Burlington: Ashgate, 2004); Martin, *Women*; a similar argument has been made concerning home science and the University of New Zealand: Tanya Fitzgerald and Jenny Collins, *Historical Portraits of Women Home Scientists: The University of New Zealand* (New York: Cambria, 2011).

¹⁰⁰"Camden Collegiate Cooking Class," *Our Magazine*, (April 1876), 139, NLCSA.

¹⁰¹"The Technical," *Our Magazine*, June 1907, 46, NLCSA.

¹⁰²Miller, "Assent as Agency," 49.

¹⁰³Mona Gleason, "Avoiding the Agency Trap: Caveats for Historians of Children, Youth, and Education," *History of Education* 45, no. 4 (2016): 457.

as these can be read as the students claiming their own agency over their future role of housewives.

Unlike boarding schools, day schools could not incorporate domestic chores into the daily routine of school life. However, at MHSG, the acquisition of a specific cottage for students on the housewifery course created a more authentic experience of managing a home. The reporting of the opening of Gap Cottage in 1908 at MHSG in the school magazines gives some insight into how domestic work, and in particular, the practical aspects, were conceptualised and internalised by the students. As a student writing for *The Magazine of the Manchester High School* reported it: "Experience is a great thing – experience which teaches a girl to be able to manage a household, whether working herself or showing others how to work. No girl can make a good mistress who does not herself know how things should be done".¹⁰⁴ The school recognised that the future wealth of students might vary: some might have many servants, some possibly none.

Indeed, the role of experience was tied to the idea of experiment – both words being related to the Latin *experior*, meaning to test, to try. As the author suggested, "[t]he thousand and one difficulties which do not come in the regular routine of a cookery school have to be met and grappled with in a house".¹⁰⁵ The home was thus represented as a challenging and dynamic environment, with multiple tasks happening simultaneously. This is a marked departure from domestic advice manuals which break everything down into separate chapters and tasks, neatly compartmentalised and perfectly ordered. Schools could recreate the chaos of domestic life- successes and failures. Failures, it seems, were important in the school environment as part of a lesson in cause-and-effect: "One learns that scones require a certain amount of baking powder, but in the practical part one does not discover the result of an omission until the scone appears – well, not the light inviting dish that was intended". The author continued: "That house-keeping requires the use of brains as well as of hands is a fact which is being realised more and more every day. No longer is housewifery treated as a subject to be taught only to girls who are too dull for other work, but as a subject which is a science and which needs intellect to enlighten it".¹⁰⁶ Certainly to this student, the status of housewifery had been elevated by the acknowledgement that it was a science that required intellect; this was inextricably tied to the practical difficulties of running a home.

Conclusion

This article has analysed how two of the new day schools of the Victorian period conceptualised housework in the period 1870 to 1914. As science was associated with domesticity in contemporary schools and society more broadly, it has been examined alongside domestic subjects. Housework was represented as challenging and important work, that was not demeaning or offensive to middle-class sensibilities. To do it successfully, students were taught to use scientific principles. Through practical domestic labour, which could be rehearsed in domestic subjects and/or science classes, the housewife was presented as having

¹⁰⁴A.T.P., "Gap Cottage," 29.

¹⁰⁵Ibid.

¹⁰⁶Ibid.

the skills and faculties of a scientist. From scraps of evidence, it seems this ideology was at least sometimes internalised by students, and certainly it aligned with the professional values of their female teachers. Thus, this article is fully in concurrence with Nakagomi's work which demonstrated that domestic subjects always had a presence in these new day schools, and they were not confined to the theoretical. Whilst earlier scholarship suggested domestic subjects were marginalised, out of concern for the maintenance of ladylike behaviour, the reality was much more complex. This article has suggested that this increased push towards practical work in both science and domestic subjects is indicative of the broader reality of domestic life for middle-class women, which likely involved physical labour. Moreover, the practical nature of housework was not in spite of its potential scientific nature; it was part and parcel of it. If housework is practically difficult, it required training in scientific principles, like efficiency and rationalisation, in order to be done correctly. The schools acknowledged that not all their students would go on to have many servants, and if they did, they should know for themselves the practical aspects of domestic labour, which were, in these institutional incarnations, best undertaken with scientific principles.

The period 1870 to 1914 was one in which questions were being asked of the relationship between science and domestic subjects within educational circles. It is of course no coincidence that society more broadly was connecting domesticity with science, as part of a desire to train housewives to be more effective at maintaining the health and wellness of their families. The intellectual and scientific representation could take on literal forms in a school environment, through the teaching of domestic subjects and science. For example, the domestic arts classes at NLCS that were taught in a laboratory and a kitchen demonstrate how broader cultural trends uniquely manifested in the school environment. On the one hand, this is a reflection of a broader cultural trend associating the kitchen with the scientific laboratory. But on the other, schools were manifesting these cultural trends for themselves in how, why and where they taught domestic subjects and science. There were, as has been shown, differences in how this worked in practice at each school. The content of the schools' curriculums, how they were taught, and how they were justified, were dependent on the particular views of the headmistress. Earlier research, such as that of Dena Attar, accurately portrayed the way in which domestic subjects reproduced patriarchal notions of women's home centeredness. However, this is only half the picture. An examination of schools can also uncover female agency, of headmistresses, teachers, and students, in how gendered and classed codes of behaviour took shape. Moreover, this highlights the importance of looking at local and institutional contexts to examine contemporary constructions of gender. The result is a more detailed and specific understanding of how gender roles were conceptualised, and how individuals played a part in their construction.

At other middle-class girls' day schools, the same questions of domestic subjects and science were being asked but were likely tackled in their own unique ways. The experience of housework in later life may not have corresponded to this institutional construction, just as "scientific housewifery" was ideological rather than a practical reality. But the institutional conceptualisation of housework demonstrates how schools operated to produce powerful constructions of middle-class womanhood to students at a key stage in their lifecycle, and simultaneously bolster the careers of the female teachers.

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