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The Origins and Development of the Mechanics' Institute Movement 1824 – 1890 and the Beginnings of Further Education

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Abstract

With the rapid developments and changes in the Further Education (FE) sector which have taken place over the last 20 years or so, it is appropriate to pause and question the origins and early developments of adult education and, in particular, the contribution made by the nineteenth century mechanics' institute movement. This paper questions the hypothesis that mechanics' institutes failed in offering education of any significance to working class adults. In doing so, the research provides a general history of the movement and its contribution to what became state funded FE which was emerging during the last decade of the nineteenth century.

Key words

Education History; Mechanics' Institute Movement; Nineteenth Century Government Education Commissions and Acts; The Great Exhibition of 1851; Adult Education; Further Education.

Introduction

Mechanics' institutes have often had a bad press by writers of the time and twentieth century historians. Robert Elliot (1861) wrote '*the banquet was prepared for guests who did not come*' (p. 26). He was highlighting that mechanics' institutes, which had been established during the first half of the nineteenth century, had not responded to the educational needs of the working classes. Many historians have argued that mechanics' institutes either failed or offered advanced lectures and classes in science to the professional and middling classes. Kenneth Luckhurst (1957) sums up what many academics were saying when he stated that '*mechanics' institutes ceased to deserve their distinctive name as so few artisans were sufficiently well educated to profit from the classes, lectures, libraries and other educational facilities*' (chapter ten, p. 4). Richard Altick (1957) believed that '*the mechanics' institutes nationally either closed down or, where they did survive, working men and women were pushed out*' (pp. 191–192). Historians have, however, tended to only study the period from when the first one (Glasgow) was opened in 1823 up to 1850 when it was assumed by many that the movement had failed. This paper argues that this was not the case, providing evidence that mechanics' institutes did provide a firm foundation on which technical and vocational education was established by the beginning of the twentieth century and has continued to date.

Eighteenth Century Developments In Adult Education

Literary and philosophical societies were the pre-institutions to mechanics' institutes. They were founded in the eighteenth century, bringing together leading scientists, academics, medical men, manufacturers and merchants in a number of provincial towns for debate and education (Roderick and Stephens, 1971). The Manchester Literary and Philosophical Society was founded in 1781, Birmingham in 1789, Newcastle in 1793 and Leeds in 1819. Other literary and philosophical societies included those at Derby, Bristol, Bath, Sheffield, Hull and Whitby (Royle, 1989). Such societies were ideally positioned to '*help the more affluent to adjust to the changes taking place in England and ensured that the middle and*

upper classes were kept informed about the adjustments they needed to make to come to terms with the new industrial age' (Royle, 1989: p. 50).

Founded in 1796, the Anderson's Institute, based on the literary and philosophical society idea, was the first technical college to provide scientific instruction with the opportunity for practical application of ideas. The institution was the first in the world to provide evening classes in science and the first to admit women on the same terms as men. It was named after its benefactor, Dr John Anderson (1726 – 1796), who was Professor of Natural Philosophy at Glasgow University. Dr George Birkbeck was at one time a professor at the Institute (1799) and he provided free classes in chemistry and mechanics. Birkbeck was born in Settle, Yorkshire in 1776 and was educated locally. Being of a Quaker family he was barred from attending an English university and instead read medicine at Edinburgh. Henry Brougham, who was connected with the Edinburgh School of Arts (1821), was in the same medical class as Birkbeck. Both were to work together in London as supporters of working class adult education through the London Mechanics' Institution, founded in 1824 (Kelly, 1957).

In 1823, the Glasgow Mechanics' Institute had superseded the Andersonian Institution. Birkbeck became patron of the new institute and his appointment was of paramount importance to its success (Kelly, 1957). The Glasgow Institute supported the momentum towards a more national movement, being self-governing and self-supporting. It enrolled over 1,000 students in its first year (Evans [accessed online 01/05/2011]). The early developments and successes associated with the mechanics' institute movement were therefore Scottish, with several mechanics' institutes being established around both Glasgow and Edinburgh. Their early influences quickly spread south of the border to London and then to the provinces.

Brougham became involved with Birkbeck's London Mechanics' Institute in 1824 and was one of the founders of the Society for the Diffusion of Useful Knowledge in 1826, which was set up to publish affordable books and pamphlets on both the sciences and arts. In 1826, Brougham played a vital role in establishing London University and particularly in persuading dissenters not to set up a rival one in the capital. Brougham was elected MP for Yorkshire, supported by Edward Baines - a publisher in Leeds - and the Duke of Devonshire. Both were supporters of the mechanics' institute movement. Later Brougham was received into the House of Lords. After his political career was over, he spent his retirement (in his 80s) travelling the country, encouraging working men to manage their own local mechanics' institutes (Oxford Dictionary of National Biography [accessed online]).

The mechanics' institute movement was being established at a time when trade conditions were improving, thus leading to the abatement of (some of the) social strife which accompanied them, providing the necessary stability and encouragement for developing adult education. Brougham remarked in 1824, *'this is the moment beyond all doubt, best fitted for the attempt to introduce mechanics' institutes nationally when ways are good, and the aspect of all things peaceful'* (Tylecote, 1930: p. 20).

Gordon Roderick and Michael Stephens have suggested that mechanics' institutes developed at a time when there was industrialisation and the new technological age required skilled workmen who needed to know the elements of science. Institutes were also seen as part of the growing movement for the provision of popular education (Roderick and Stephens, 1971). Thomas Kelly argues that there was a tremendous interest in the teaching and learning of practical science. Yet by the mid-nineteenth century

the grammar schools and the universities of Oxford and Cambridge were still not interested in the scientific movement, and the dissenting academies, which had been established by non-conformists for the purpose of supporting industrial development, were in decline (Kelly, 1962). The migration of workers into the urban centres and the demand from industry for a better educated and technical workforce resulted in a strong base for the expansion of working class adult education through the mechanics' institutes.

Brougham appealed to the educated that the teaching in the mechanics' institutions should be *'well and not badly given, the labouring classes should be encouraged to volunteer and profit by the opportunity thus afforded'* (p. 31). He appealed to employers to assist the new movement and many did in the towns where they resided. These included Alexander Galloway, an engineer and supporter of the London Institute; George Stephenson, a railway engineer from Newcastle; Marc Brunel - father of Isambard - a civil engineer from Rotherhithe; Josiah Wedgwood, the pottery manufacturer from Hanley in Staffordshire; Benjamin Heywood, a banker from Manchester; and Charles Hindley, a cotton manufacturer from Ashton-under-Lyne (Kelly, 1962).

Brougham also hoped that working men themselves would establish and support their local mechanics' institute. He stated in his *Practical Observations* (1825) that the working classes themselves should have a principal share in the management. He saw this as not only contributing to the success of the mechanics' institutes but also providing some independence.

Several institutes were indeed established by working men themselves. This was true of Keighley, where the institute was founded by a joiner, John Haigh; a painter, John Bradley; a tailor, William Dixon; and a reed-maker, John Farrish (Purvis, 1989). At Burnley in Lancashire *'a few poor men wished to establish a library and were assisted in the initial stages by tradesmen of slightly better position, an ironmonger acting as secretary and a pawnbroker as friend and adviser'* (Tylecote, 1930: p. 60). This was also the case at Morpeth in Northumberland and Kendal in Westmorland, where the institute began as a working men's library (Tylecote, 1930).

There was some opposition to the mechanics' movement. The Reverend George Holt, curate of Oadly, attacked both the Leicester Mechanics' Institute and one in nearby Loughborough, stating that *'education should not be perverted into schools for the diffusion of infidel, republican and levelling principles'* (Lott, 1935: p. 12). The Leicester Institute *Annual Report* for 1835 recorded its concerns that many of the middle class population in the town believed that *'the working classes do not want learning...learning would make them discontented'* (ibid, p. 5).

'Decline' Of The Movement

The mechanics' movement suffered a severe decline in membership from the late 1820s to early 1840s, caused by strong opposition and economic depressions. Other factors included the expense of establishing and running the institutes with lecturers being particularly expensive. This meant that it was common to pay them between £4 and £5 a lecture, which was too expensive for many of the smaller institutes who would only have small rooms. The quality and content of many lectures were also questionable. Finally, after long working days, members were often too exhausted to attend the institutes in the evening, which often offered irrelevant classes and lectures. As Tylecote remarked *'the English working man, ill-educated as he commonly was, and tired at the end of a long day's work, just could not absorb the long and systematic courses of lectures on*

chemistry, mechanics, hydrostatics and the like which nearly all the institutes attempted in the early days' (p. 62).

Thus, those institutes which had been formed around 1825 either disappeared, among them the original foundations at Bradford, Huddersfield, Skipton and Stockport, or they struggled, such as the one at Halifax, which became '*feeble after three years*' (Tylecote, 1930: p. 76). This vulnerability during the 1820s and 1830s has, to a great extent, given the impression that the movement had failed and for historians to write off the contribution made by mechanics' institutes to the education of the adult working classes. The larger institutions, among them Leeds, Liverpool and Manchester, were more secure than those in the smaller towns, partly at least because the middling and professional classes were more likely to attend (Tylecote, 1930).

Re-Emergence Of The Mechanics' Institute Movement

Despite these setbacks, by 1841 there were over 300 institutes located across the country, with Lancashire and Yorkshire having the largest numbers (Tylecote, 1930). Ten years later, there were nearly 700 mechanics' institutes with about one quarter located in Lancashire and the West Riding of Yorkshire, making the latter the most densely covered area in the country. '*There was now scarcely any sizeable town without its mechanics' institute or similar body and many were situated in quite small villages*' (Kelly, 1962: p. 125). In Scotland and Wales the spread was much less marked, in the case of the former, the concentration was still in the Forth-Clyde valley and in the latter, it was the southern industrial region.

In some parts of the country the institutes were organised into unions for mutual support such as the Lancashire and Cheshire Union, the Northern Union (Northumberland and County Durham) and the Yorkshire Union. They were well organised and efficient. In the case of the Yorkshire Union, its success resulted in being so large that later it was divided into sub-unions of the North, East and West. The unions provided advice on how to establish and manage institutes, support with providing competent lecturers, loaned books and gave financial support (Kelly, 1962).

Joseph Hole (1851) had a particular interest in reforming adult education amongst the working classes. Writing in 1851, he stated that '*education is not an affair of childhood and youth; it is the business of the whole of life*' (p. 45). Hole went on to say that '*the nation which possesses the largest number of skilled artisans, capable of availing themselves of the aids which science lends to industry, will, other things being equal, be the richest nation*' (p. 47). Hole had identified the importance of mechanics' institutes in supporting adult working class education in both industrial and rural areas. He believed that the rural institutes could provide courses in science with agriculture for farmers and husbandmen supporting '*the culture of land, the maturing of crops, their value when reaped, the feeding and treatment of stock, the manufacture and management of butter and cheese*'. Hole saw the importance of chemistry as an industrial subject supporting the dyeing, bleaching and other trades in support of British industrial progress (Hole, 1851, p. 51).

Examinations, Commissions And Legislation

The government had taken little interest in elementary education and even less in adult technical education. The Great Exhibition of 1851 - the idea of Prince Albert, supported by the Society of Arts - highlighted that Europe was gaining ground on Britain's industrial supremacy. National examinations were introduced for students attending technical classes in the mechanics' institutes. The first to do this was the Government Science and Art Department South Kensington (Science and Art Department) established in 1853. It

was administered by the Board of Trade, and one of its first responsibilities was to provide grants to institutes that offered its examinations in science (chemistry, electricity, heat, light) and art (design, drawing, architecture). The department also provided scholarships for students who gained high marks to continue with their studies in London. Several students from the Yorkshire Union were supported, including two from Bingley Mechanics' Institute (*Yorkshire Union Report*, 1853).

Another examination board was the Society of Arts for the Encouragement of Arts, Manufactures and Commerce (Society of Arts), which introduced examinations from 1856 in technical and commercial subjects. The City and Guilds of London Institute for the Advancement of Technical Education (City and Guilds London Institute) was established in 1888 and also offered examinations in technological subjects including mining and textiles (McCord, 1991).

Such developments supported the ongoing success of the mechanics' institute movement. The Warrington Mechanics' Institute, for example, was declining by 1850 but its life was extended up to 1891 with the opportunity for students to sit the Society of Arts examinations in technical subjects (Stephens, 1958). Huddersfield Mechanics' Institute became the Northern Examinations Centre for the Society of Arts and gained national recognition for offering their qualifications (Walker, 2008). Indeed, most institutes offered the opportunity for their students to sit the examinations no matter how small or large they were. Many also offered elementary education both for adults and children, particularly prior to the passing of the 1870 Education Act.

Seven years after the Great Exhibition, the *Report of the Commissioners appointed to inquire into the State of Popular Education in England of 1858–1861*, known as the Newcastle Report, was published (Stephens, 1958: p. 132). It highlighted the need for '*the extension of sound and cheap elementary instruction to all classes of the people*' (Stephens, 1958: p.132) and that both working class children and adults should have the opportunity to attend an educational establishment. Crucially, in relation to this study, the Report had identified the need for elementary education for adults.

One of the main results of the Education Act of 1870 was the setting up of local school boards in areas of deficiency to support elementary schooling that had first emerged in the voluntary sector, although education would become compulsory after the passing of the Mundella Act up to the age of 11 in 1893 and later to 12 in 1899. The mechanics' institutes had contributed to supporting working class elementary education, both of adults and children, until the impact of the Acts resulted in them being able to concentrate on advanced technical subjects once their members had had an elementary education (Curtis, 1968).

In 1872, a government paper was published, called the *Report of the Royal Commission on Scientific Instruction and the Advancement of Science* (Maclure, 1969: pp. 139-140). The Duke of Devonshire, was patron of the Yorkshire Union of Mechanics' Institutes and supported several institutes. The Report took the form of a detailed survey of scientific education at universities and other institutions. The Report urged that elementary schools should provide more science teaching and training colleges should offer courses for science teachers. It also stated that the Education Department and the Science and Art Department should be co-ordinated and work more closely together. They eventually became one department with the passing of the 1902 Education Act. By 1880 there were over 70 mechanics' institutes offering examinations through the Department of Science

and Art to about 7,000 students of whom 4,000 were taking science subjects and the remaining 3,000 attended art and design classes (Maclure, 1969).

The Report stated that '*considering the increasing importance to the material interests of this country, the almost total exclusion from training of the working classes is little less than a national misfortune*' (Davies et al, 2002: pp. 108–9). In fact, Lyon Playfair of the Society of Arts highlighted the fact that the working classes were receiving better instruction in science and commerce through mechanics' institutes than their wealthy counterparts in the universities.

There was concern from both employers and employees that Britain would lose its position in the world as a leading industrial country if technical education was not available to everyone in response to foreign competition. In 1879, Dr Silvanus Thompson observed that '*trained workers equipped with intellectual weapons, and clothed with sound science would be required and to ignore this call to arms would result in Britain struggling for existence*' (Davies et al, p. 139). To allay these fears, four artisan exhibition tours took place between 1867 and 1889. They were devised to publicise the importance of industrial education. The tour organisers also sent artisans overseas '*to learn about continental advances in their respective trades and to evaluate Britain's strengths and weaknesses in the light of these advances*' (ibid, p. 139). The tours were initiated by the Society of Arts and the findings were included in the science and technology curriculum for examination in the mechanics' institutes.

The result of these concerns was the *Report of the Royal Commission on Technical Instruction* which was published in 1884 (Maclure, 1969). Bernard Samuelson, the Chair, had been an iron master and engineer prior to becoming an MP in 1859. He therefore had a personal interest in technical instruction and having travelled throughout Europe he had made comparisons between countries in relation to technical education that they were offering. Swire Smith, who was one-time president of the Keighley Mechanics' Institute and had made visits to France and Germany with regard to technical education, was also on the Committee of the Commission (Maclure, 1969). The Report's findings identified that training should be given in technical institutions and science teaching from elementary to advanced level should also be offered. It emphasised the importance of local authorities providing first-class technical instruction in a variety of educational establishments, including day schools and mechanics' institutes.

The Report led to the passing of the Technical Instruction Act of 1889 which gave local authorities the power to levy a penny rate in order to fund technical courses, appoint teachers and provide grants to schools and mechanics' institutes. In 1890, the government, in support of the Temperance Movement, which itself had been heavily involved in the mechanics' institute movement, put a tax on wines and spirits ('whisky money') and it was decided that the money raised should be used for supporting technical education (Curtis, 1968).

Finally, at the end of the nineteenth century, the *Report of the Royal Commission on Secondary Education* was published (Maclure, 1969). It recommended that a Minister for Education should be appointed to take over the Education Department, the Science and Art Department and the Charity Commission. The Minister would have responsibility for universities, schools and education offered by local authorities. It was under these powers, supported by the Education Act of 1902 when the 'whisky money' ceased and a general tax was introduced, that technical education became well established through central funding from government (Stephens, 1958: p. 198). By 1918, mechanics' institutes were

finally replaced by art and technical colleges for post school-age students (Maclure, 1969: p. 140). The buildings of former mechanics' institutes often became technical colleges, such as those at Glasgow, Edinburgh, Manchester, Leeds, Huddersfield, Bradford and Birmingham (McCord, 1991: p. 348). Institute libraries were taken over by the towns for public access, many being housed in buildings funded by Andrew Carnegie's Trust (Kelly, 1962).

Conclusion

This paper confirms that the mechanics' institute movement was a success and did provide a firm foundation on which FE was established by the beginning of the twentieth century. Although the movement initially 'failed' to support adult working class education, its ultimate success was due to mechanics' institutes responding to the needs of industry, following the findings of the Great Exhibition of 1851. Courses and lectures were offered that were relevant to employers and employees and given national recognition through examinations offered by the Department of Science and Art, the Society of Arts and the City and Guilds London Institute. The Great Exhibition shocked government into the need of supporting employers with industrial development and foreign competition which resulted in commissions and later the Technical Instruction Acts being passed, bringing mechanics' institutes into what was effectively state ownership. It is not over-simplistic to say that the committees of mechanics' institutes responded in similar ways to how colleges of FE do now and have done for many years, that is, in order to be successful they introduced courses for adults, at both elementary and advanced level, and qualifications which supported employers' needs in making a crucial contribution to industrialisation. Many colleges of FE and some universities can trace their origins back to their local mechanics' institute. Thus, the banquet was prepared for guests who did come, albeit some time later, and partook in what was offered, namely the modern equivalent of vocational and technical education.

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Mechanics' institutes are educational establishments, originally formed to provide adult education, particularly in technical subjects, to working men. Similar organisations are sometimes simply called "institutes". As such, they were often funded by local industrialists on the grounds that they would ultimately benefit from having more knowledgeable and skilled employees (such philanthropy was shown by, among others, Robert Stephenson, James Nasmyth, John Davis Barnett and Joseph Whitworth). The book traces the historical development of several mechanics' institutes across Britain and reveals that many institutes supported both the Development of the Mechanics' Institute Movement in Britain and Beyond questions the prevailing view that mechanics' institutes made little contribution to adult working-class education from their foundation in the 1820s to 1890. This book presents evidence to suggest that the movement remained active and continued to expand until the end of the nineteenth century. Drawing on historical accounts, Walker describes the developments which shaped the movement and emphasises the institutes' provision for scientific and technical education. Tutoring as an original educational philosophy and primary way of organisation of educational system dates back to the medieval European universities of XII-XIV cent. According to Proskurovskaya I.D., tutoring as an institutionalised form of mentoring appeared at first British universities – Oxford (XII cent.) and Cambridge (XIII cent.). Tutoring in the history of English education In order to find out inner basis for tutoring, Proskurovskaya I.D. turns to study of "genetic" connection between tutoring and Christian monastic lifestyle: "In XI-XII centuries monasteries created the most favourable environment for development of culture and education. The history of mechanics' institutes is at once beautiful and terrible to read", Christopher Charles Cattell, the Birmingham radical republican, told the members of his Eclectic Institute in 1854. Contemporaries of the mechanics' institute movement in the mid-nineteenth century were acutely aware of this terrible history. "The banquet was prepared for guests who did not come", wrote Robert Elliott in 1861. J. W. Hudson referred to "The universal complaint that Mechanics' Institutions are attended by persons of a higher rank than those for whom they were designed". The Westminster Review The Mechanics' Institution was formed by industrialists who thought that artisans should learn basic sciences at evening classes. Its first building was near St Peter's Square. At times the Institute struggled because students had little basic education; primary schooling was not made compulsory in England until 1870. The increasingly high standards of education and the beginnings of research at the technical college raised questions about its relationship with the newly independent Victoria University of Manchester, a mile to the south, which had its own department of engineering. An agreement was reached in 1905 for the professors at the College of Technology to constitute the Faculty of Technology of the Victoria University.