New Zealand's first local building training: 1897 & 1902

Nigel Isaacs, Victoria University of Wellington, Wellington School of Architecture

ABSTRACT: The first New Zealand book relating to carpentry held by any library is from Christchurch publisher Whitcombe & Tombs Ltd in 1897. The 90-page book, *Manual Training in Woodwork: A Handbook for Scholars of the Primary Schools of New Zealand*, was written by FW Sandford and SC Owen. It was one of the company's "Public School Series." The next book is the Department of Education's 1902 *Handwork for Schools: Woodwork*, authored by EC Isaac. Both provide basic training in the use of tools and instruction to make simple items, such as a folding chair, a bath-mat, a set of bookshelves or even a step-ladder.

Isaac's book, as well as "helping teachers who are taking up woodwork in school classes," set out the expectations for a two-year woodwork course under the Manual and Technical Instruction Act 1900. As for the students, its goal was to support them to achieve "full and symmetrical development of the powers of hand and eye as servants of the brain." This included the skills of drawing to scale, as "without drawing, exact and intelligent handwork is scarcely possible." It was not until 1944 that the Army Education Welfare Service (AEWS) published a set of five carpentry booklets for adult learners and 1958 until the Technical Correspondence Schools' *Carpentry in New Zealand*. The paper explores the history of these two publications and their authors.

AI Statement: AI was not used in any aspect of researching and writing this paper.

Introduction

A previous paper explored the development of the 1958 New Zealand Technical Correspondence School publication *Carpentry in New Zealand*. The paper traced its history from the 1944 Army Education Welfare Service publications designed for the training of adult solders. It discussed how such a publication was seen as a crucial part of reducing the cost of housing by the creation of a trained and skilled workforce. The investment of time and resources by Government departments and agencies was seen as contributing to the good of the nation, as well as to assisting New Zealanders to purchase quality housing.[1]

That paper claimed that the "first book held by any New Zealand library relating to carpentry is the Department of Education's 1902 *Handwork for Schools: Woodwork*."[2] The current paper explores this claim, proving it incorrect as an 1897 publication has now been identified. This paper examines the 1897 commercial and 1902 government publications through their authors, their situation with regard to public opinion of the time, and education requirements.

1897: *Manual Training in Woodwork: A Handbook for Scholars of the Primary Schools of New Zealand*

The first commercial New Zealand book on woodwork training that has been found was published by Whitcombe and Tombs in 1897. It was authored by Major FW Sandford and SC Owen of Christchurch.[3]

Major FW Sandford VD (1853-1941)

Frederick William Sandford was born in Salford, England on 29 March 1853.[4] By the time he was 13 his family had moved to New Zealand to the Heathcote Valley, Canterbury,

[1] Isaacs "*Carpentry in New Zealand*" pp 7, 13.
[2] Isaacs "*Carpentry in New Zealand*" p 7.
[3] Sandford & Owen *Manual Training in Woodwork*
[4] "Frederick William Sandford" np.

where for "some months they had to live in a shed without proper walls, and one of the boys' jobs was to keep up supplies of bundled flax leaves, and of dried cow dung, for the household fuel."[5] He had wide work experiences, with one obituary reporting he learnt "roadmaking for his father,"[6] but his own entry in the *Canterbury Provincial District Cyclopedia* reported he was "brought up as a carpenter and joiner by his father."[7] In 1875 he married Maria Clarke (1848-1920), the daughter of another old settler, and they had two children who survived – a daughter (1876-1943) and a son (1879-1945).

In 1880 Sandford was apprenticed for three years to EH Jenkins, organ builder of Christchurch.[8] He set out on his own in 1884 with his workshop at the back of the residence in Antigua St, repairing and enlarging existing organs and building new ones to order.[9] Newton, in his thesis on New Zealand organ builders, lists 11 organs built by Sandford from 1884 to 1905.[10] In 1885 Sandford reported on the condition of the organ in the Trinity Congregational Church, Christchurch but was not awarded the resulting repair work. In 1896 he undertook work on that organ, adding four stops.[11]

Alongside his organ building and repair work, Sandford was involved in teaching, although he never registered as a certified teacher.[12] In 1889 Sandford's first teaching appointment was as the manual training instructor at Christ's College, Christchurch.[13] In 1901 he was the Manual and Technical Instructor at the Canterbury Agricultural College, Lincoln.[14]

Sandford joined the fraternal society, the Manchester Unity of Oddfellows, in 1872 and by 1904 he was a Past Provincial Grand Master (PPGM). His voluntary military service began in 1869 when he joined the New Zealand Volunteers No. 2 Engineers. He became a Captain of the Christchurch City Guard in 1901,[15] retiring on 1 March 1904, moving to the "Active List" due to the travel required to meet his work for the Education Department.

In 1907 Sandford moved to New Plymouth[16] where he was employed by the Taranaki Education Board teaching the woodwork classes at the newly established Technical School.[17] In the same year he was awarded the Colonial Auxiliary Forces Officers' Decoration (post nominal "VD") having served for over 20 years.[18] His voluntary military service continued, and on 22 June 1908, Major FW Sandford was put in command of the "No. 1 Taranaki Public School Cadet Battalion."[19]

In 1908 the Boy Scout movement started in England, and just one year later Sandford actively helped it start in New Zealand,

[5] Culliford *New Zealand Scouting* pp 93-94.
[6] Culliford *New Zealand Scouting* pp 93-94.
[7] *The Cyclopedia of New Zealand: Canterbury Provincial District* III: 173.
[8] "Edgar H. Jenkins" np.
[9] *The Cyclopedia of New Zealand: Canterbury Provincial* III: 173.
[10] Newton "Organ Building in New Zealand 1895-1930" Part IV p 538.
[11] Newton "Organ Building in New Zealand 1895-1930" Part IV pp 522, 529–530.
[12] Newton "Organ Building in New Zealand 1895-1930" Part IV p 535.
[13] *The Cyclopedia of New Zealand: Canterbury Provincial District* III: 173.
[14] "The Director and Lecturers" p 34.
[15] *The Cyclopedia of NZ: Canterbury Provincial* III: 173.
[16] "Education: Manual and Technical Instruction" p 68.
[17] "Death of Major Sandford" p 6.
[18] Sandford "Receipt for Colonial Auxiliary Forces Officers' Decoration" R23513969
[19] "Reorganization of Public-School Cadet Battalion, and Recognition of Companies, &c." p 1727.

becoming a friend of the founder, Lord Baden-Powell. He filled all the New Zealand organisation's officer roles and was finally appointed Commissioner for New Zealand. His activities included taking two parties of Scouts to jamborees in Britain, touring New Zealand training Scoutmasters, and providing leadership to Taranaki scouts.[20] This included walking with seven boys with a 6¾ cwt trek-cart on a round trip from New Plymouth to the 1913 Auckland Exhibition.[21] Sandford was remembered from a 1924 camp (when he was about 71 years old) as "an old man - and a somewhat crusty one too!"[22] He died, aged 88, on 18 August 1941 in New Plymouth.[23] At his request, the cart used on the Auckland trek was used to carry his coffin to its final resting place in Te Henui Cemetery, New Plymouth on 20 August 1941.[24]

SC Owen, BA, MA (1865-1922)

Sidney Charles Owen was born in St John's Hill, London, England in 1865, arriving at Lyttleton in 1879. He served for three years as a pupil-teacher at West Christchurch School, gaining a training scholarship to the Normal School. In 1883 he returned to West Christchurch School as assistant-master, then in 1891 became the first headmaster at Doyleston School (near Leeston, Canterbury). In 1891 he married Florence Roberts (1866-1949) and they had two children – a son (1899-1956) and a daughter (1903-88).[25]

In 1904 Owen became Assistant Headmaster at East Christchurch School and Headmaster in 1904. In 1911 he became an Inspector of Schools for North Canterbury, a role he continued in until his death on 21 January 1922 aged 56.

While teaching Owen also studied at Canterbury College, graduating in 1897 with a BA and in 1909 with an MA in Political Science. He was a member of the North Canterbury Branch of the New Zealand Educational Institute, and president in 1907. He was a member of the Board of Governors of the Christchurch Technical College; Examiner in Music for Education Department and for many years Honorary Organist at the Trinity Congregational Church, Christchurch.[26] He was also a member of the Linwood Tennis Club.[27]

Need for the book

In August 1889 The Manual and Technical Elementary Instruction Bill was introduced by Mr George Fisher (Member for Wellington East) to the House of Representatives, but it was not passed. The bill was intended to provide instruction to pupils at public schools "beyond the ordinary school time" to "such scholars as have passed the fourth standard." Payment was to come from the Minister of Education to the Education Board for a course of at least 12 hours a week for 10 weeks each quarter, although fees could also be charged to the student.[28]

This was the first of a series of private members bills introduced each year from 1889 to 1895.[29] Regardless of their lack of success, public pressure to increase technical training in schools continued to develop. The *Press*, in its editorial of 4 June 1896, noted the

[20] "Death of Major Sandford" p 6.
[21] "A Long Trek" p 2.
[22] Culliford *New Zealand Scouting* pp 93-94.
[23] "Obituary Major F.W. Sandford" p 6.
[24] "Scouts Do Honour" p 6.
[25] "Miss Isobel Gytha Owen" np.
[26] Hight & Candy *A Short History of the Canterbury College* p 185.
[27] *The Cyclopedia of NZ: Canterbury Provincial* III: 176.
[28] "Technical Education: Mr Fisher's Bill" p 5.
[29] "New Zealand Historical Bills beginning with M ..." np.

government was providing a subsidy for technical classes which had been taken up in Dunedin and by the Christchurch School of Domestic Instruction. It noted:

> The keeping of children, in the primary schools, after they have passed the Sixth Standard is a waste of time and money. It wastes the time of the pupils, the teachers, and the Inspectors, and the capitation spent on these superfluous pupils could be far more wisely expended if devoted to technical education.[30]

It was not until the government's Manual and Technical Instruction Act 1900 Act (64 VICT 1900 No 39),[31] that a requirement entered the law books, but the subsidy had already made its impact with students paying a small fee for classes after normal hours.

In April 1897 the North Canterbury Education Board, making use of the subsidy, employed Sanford to give Saturday morning and Wednesday afternoon classes for children, and evening lecture for teachers, based in the Drill Hall, Normal School, Christchurch. The 20 student benches, tools, timber and other expenses totalled £178 ($44,500 in $2025 Q3).[32] He was appointed permanently to this role in June 1897, then adding classes at Leeston and Ashburton.[33]

Some 120 students from the sixth and seventh standards were enrolled in a three-year course. The students copied down the exercise from the blackboard, and then "produced it to scale in wood."[34] The teaching technique of making models from scale drawings was named "Sloyd" (after Swedish word "slöjd" or craft). It was brought to international attention though the lectures of Otto Salomon, Director of the Sloyd Teacher Seminary at Nääs, Sweden.[35]

The course had 13 exercises each year:

> The first [year] is composed of simple exercises with the plane, chisel, saw, square and gauge. The first thing a pupil is set to do is to "true" a rough piece of wood, and the last exercise of the course is the making of a simple mortise and tenon joint. In the second year he takes up his work at the point where he left off at the end of the first, and, after learning how to make joints of various kinds, is instructed in the manufacture of simple articles of domestic use —a wooden stool, a boot-jack, a washstand. He begins his third year's course with making boxes, learns rounding, hinging and other branches of the work, and finishes by making a small panel-door.[36]

The following year (1898), the work of four students was considered of such a high quality that it was sent for examination at the South Kensington School of Technical Science, England.[37]

Writing of the book

At first appearance the link between Owen and Sandford is not obvious – why should a specialist woodwork manual teacher co-operate with an academic, political-science-trained teacher? The most likely common link was their interest in the organ – Sandford in building and maintaining, Owen in playing, and the church with a familial link.

Based on historical New Zealand births, deaths and marriages records, on 29 April 1885 John Tracy Knight married Mary Elizabeth Sandford – Frederick William Sandford's sister. On 10 March 1886 the Knights were delivered of a baby girl, but sadly on 28 May 1886, just over 2½ months

[30] "The Press: Thursday, June 4, 1896: Technical Education" p 4.
[31] Manual and Technical instruction Act 1900
[32] Inflation calculator np.
[33] "Education: Twenty-First Annual Report of the Minister of Education" p 80.
[34] "Manual Instruction" p 6.
[35] Salomon *The Theory of Educational Sloyd*
[36] "Current Topics" p 1.
[37] "Technical Education" (4 August 1898) p 2.

later, Mary died.[38] Sandford adopted his niece, acting in *loco parentis* for her 1908 New Plymouth wedding.[39] Knight had trained in electrical work, but in 1880 had taken up music as a profession.[40] In his 1880 advertisements for students he promoted himself as "Organist Trinity Congregational Church."[41] In 1894 Knight returned to his original profession in time for the 1895-1900 mining boom. He installed electrical plants in Thames and Ohinemuri, later becoming electrician at Waikino. He did not remarry and died in Auckland in 1934.[42]

Although it is unclear how long Knight was in the role of Trinity Congregational Church organist, it is likely that he knew fellow organist Owen, which would in turn have placed Owen in contact with his brother-in-law Sandford, thus creating the writing team.

1897 saw the publication of *Manual Training in Woodwork*, 90 pages long with line drawings, etching and photographs. The Preface links clearly to Sandford's experience in teaching and setting up the after school classes for students and teachers in the absence of a suitable textbook:

> Manual Training will no doubt become, and that at no distant date, an integral part in the education of those attending the primary schools of New Zealand. The training of the hand and eye of the pupils will become as important as that of the mental faculties.
> At present there is no text book suitable for beginners, nor one containing the necessary instruction, exercises. and drawings. This work is written to meet these requirements, and it is hoped that it can be used practically even by those who, by reason of distance from centres of instruction, are unable .to obtain the services of an efficient teacher in woodwork.
> Most of the exercises are those used in the Christchurch Normal School Manual Workshop.
> It is intended to issue a more advanced book for teachers and others at a later date.
>
> F.W. Sandford, S.C. Owen, B.A.[43]

No publication details for the "advanced book" in the last sentence have been found.

Manual Training in Woodwork starts with an overview of its philosophy, moving to provide detailed guidance on the use of a wide range of woodworking tools (complete with etchings), a series of 36 exercises (with elevation and often oblique projection drawings), descriptions of common timbers and details of the tools and wood requirements for the exercises as well as a plan of the workroom at the Christchurch Normal School.

The high value of manual training is well explained, linking physical, mental and moral benefits as well as the respect given to "honest labour":

> The uses of Manual Training in woodwork when taught in our schools as an important part of the syllabus are numerous.
> From a *physical* point of view Manual Culture will not only develop the accuracy of the eye and the sense of form and touch, but will also greatly increase the dexterity of the hand and the general activity of the body.
> From a *mental* point of view it will at once be seen that faculties of perception and concentration will be assisted, together with the quickening and stimulation of the intelligence; while from a *moral* point of view Manual Training will develop and in many cases assist in forming habits of self-reliance, independence, perseverance, attention, diligence and patience. To these may be added that a greater respect will be given to honest labour.[44]

Unsurprisingly, some (but by no means all) of the book traces its origins to British texts. These links can be found most clearly in the

[38] Births, Death & Marriages Online np.
[39] "Orange Blossoms" p 60.
[40] "Obituary" p 2.
[41] "Mr J.T. Knight [Educational advertisement]" p 1.
[42] "Obituary" p 2.
[43] Sandford & Owen *Manual Training in Woodwork* p 3.
[44] Sandford & Owen, *Manual Training in Woodwork* p 7 (italics in original).

philosophy and tool sections, while the text for the exercises reflects the authors' style.

The thinking behind training in the use of tools is given in *Manual Training in Woodwork* given as (common text in **bold**).[45] Note the use of the phrase "verist childhood" which is found in the original English publication of Salomon's speeches.

> Last of all, the pupils must be taught to use their tools intelligently. As far as possible both hands should be trained, **for both sides of the body should be harmoniously developed**. As Professor Salomon says, "**We are trained from our veriest childhood to use the right hand and arm, to the neglect, not to say detriment, of the left; and as a consequence, the right side is found to be far more developed than the left.**" But true Manual Training will check this, as there is no reason why planing and sawing, for instance, should not be done **as well with the left hand as with the right.**[46]

This had been taken (with some editing) from the 1887 *The Pattern Maker's Handybook*:

> It is important that both sides of the body be harmoniously developed. Children should be able to use the saw and the plane as well with the left hand as with the right. This rule does not, however, apply to the knife or instruments used by the hand rather than the arm, though such an education would be good; but the time expended in making the left hand as efficient as the right, in the use of the knife and similar tools, could educationally be spent to greater advantage. We are trained from our veriest childhood to use the right hand and arm, to the neglect, not to say detriment, of the left, and as a consequence the right side is found to be far more developed than the left. Persons engaged in manual work are frequently lop-sided. If a carpenter observed a person sawing or planing with his left hand, he would say that it was wrong. The practice of using the right arm has been confirmed and perpetuated by the position of the vice in the bench, placed, as it has usually been, at the right end.[47]

Similarly for the tools, with *Manual Training in Woodwork* describing the bow saw:

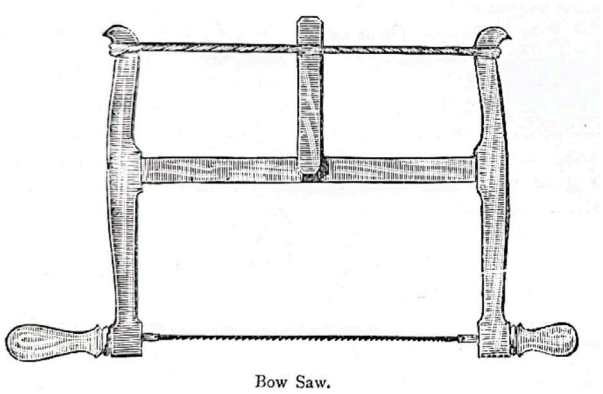
> (c) The Bow Saw is generally made of beech, with the two ends held apart by a stretcher near the middle of their length. At the lower ends the handles are placed, while the inner ends are slit to receive the saw blade. A strong cord is wound round the opposite ends of the frame, and by twisting a short wooden lever the cord is tightened. This pulls the lower ends apart, and thus tightens the blade of the saw. So that it may be easy to get round a curve both handles attached to the saw blade can be revolved. In using this saw the work is held in the bench vise, and the saw is held by grasping one handle and the end of one of the sides with both hands overlapping, thus preventing the saw blade from twisting in case the frame should move during the cutting.[48]

The Pattern Maker's Handybook gives the following description:

> The bow saw is a most useful tool for all kinds of small curved sawing. It consists of a frame made of beech or rosewood; the two ends are held apart by a stretcher let into them by a short tenon, near the middle of their length; through the lower ends, the handles are inserted, having short brass rods riveted through them; the inner ends of the rods are slit to receive the saw-blade. A strong cord is wound round the opposite ends of the frame, and by means of a short wooden lever the cord is tightened by twisting, which pulls apart the lower ends and tightens the saw-blade. Both handles carrying the blade, which is twelve inches long, turn in the holes, and thus facilitate getting round curves. In using this saw the work is held in the "lug," and the saw is held by one handle, the forefinger passing round the front in front of the handle. The teeth of the saw are pointing from you; consequently, the sawing is done with the push forward, not with the pull back.[49]

Many of the images can also be tracked to British publications. The original image may have been sourced from the tool manufacturer or other suppliers, or even from the publisher's other publications. For example, Figure 1 shows the bow saw from the 1897 New Zealand *Manual Training in Woodwork*,[50] while Figure 2 is taken from the 1887 UK

[45] Sandford & Owen *Manual Training in Woodwork* p 8.
[46] Barter *Manual Instruction* p 54.
[47] Hasluck *The Pattern Maker's Handybook* p 54.
[48] Sandford & Owen *Manual Training in Woodwork* pp 9-10.
[49] Hasluck *The Pattern Maker's Handybook* pp 44-45.
[50] Sandford & Owen *Manual Training in Woodwork* p 10.



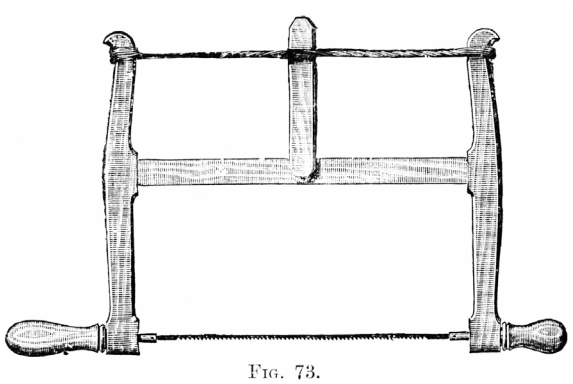


Figure 1: NZ Bow Saw (1897) (left); **Figure 2**: UK Bow Saw (1892) (right)

Manual Instruction: Woodwork,[51] which may have come from Charles Nurse & Co. 1902 *Illustrated Price List*.[52] The original wood cuts were expensive and could be used for many years in the original company's catalogues, but in this case no earlier catalogue could be found. Similar reuse of illustrations can be found in other UK publications or in publications produced far away from the original copyright holder.

Reproduction of the wood cut could be achieved in several ways. It could be used to make low cost electrotype castings to be sent to overseas agents for their use. It was also possible to make local photographic copies which could be reduced or enlarged, retaining the same proportions, for use in the preparation of photolithographic printing plates. An even lower cost approach was to trace or redraw the illustration. These methods allowed the original makers name or logo to be "erased," sometimes leaving behind a shadow. Here, Figure 1 appears to have been traced or redrawn from Figure 2. The proportions and grain patterns are similar, but the UK original's fineness of detail is lacking in the New Zealand copy.

No New Zealand newspaper or magazine advertisement has been found for *Manual Training in Woodwork*, although this may relate to the limited availability of publications from this time aimed at the schools market.

[51] Barter *Manual Instruction* p 120.

[52] *Charles Nurse & Co.* p 110.

1902: *Handwork for Schools: Woodwork*

The next New Zealand book on woodwork training was published by the Education Department in 1902. It was authored by Mr EC Isaac of Wellington.[53]

Rev EC Isaac

Edmund Charles Isaac was born in Portsmouth, England in December 1855 He married Martha Amy Pine in Postsea, Portsmouth in 1887.[54] They had seven children – two in Hampshire, England, two in Kyneton, Victoria, Australia, two in Nelson and one in Wellington, New Zealand. On his appointment to the Congregational Church of Nelson in 1894 it was reported that Isaac had come from Kyneton, Victoria, Australia and before that was assistant to the Rev Ossian Davis, of Bournemouth, England.[55] It was later reported that Isaac had the "degree of Bachelor of Civil Engineering, is an expert wood carver, and has certificates from South Kensington in all subjects he proposes to teach."[56] Isaac himself stated he had been selected "by one of the City of London Guilds to represent them" to the British "Royal

[53] Isaac *Handwork for Schools*

[54] "Golden Wedding" p 1.

[55] "Local and District" p 1.

[56] "Technical Education" (5 May 1894) p 3.

Commission on Technical Instruction" (1881-84), inspecting nine of "the Technical Colleges of Germany." He used this experience to promote technical education in England for three years and for four years during his stay in Australia.[57]

In Nelson, he worked as a minister and tutored in art at Nelson College, although his educational interests were coming to the fore. In 1901 he was appointed an Inspector of Technical Education and Manual Training, moving to Wellington.[58] On his retirement from the role of "Inspector of Technical Schools" at the start of 1923, it was reported that his:

> real culture, his burning enthusiasm, his great skill in handicrafts, and his knowledge of several branches of technology fitted him exceptionally well for the task of infusing life into the work of technical schools and manual-training centres.[59]

In retirement Isaac continued to use his skills, becoming a fellow of the Royal Astronomical Society on 14 December 1923[60] and in 1926 building a precision pendulum for the Department of Scientific and Industrial Research.[61] Isaac was an enthusiastic photographer. The Alexander Turnbull Library holds 970 of his black and white negatives, including several of his home "Te Kiteroa" 47 Apuka Street, Brooklyn, Wellington.[62] Martha died on 29 June 1938 and Edmund on 24 January 1949.

Background to the Book

Soon after his arrival in Nelson, Isaac started to promote the idea of technical education. In a letter to the editor of *The Colonist*, just four months after his arrival, he suggested a Technical School alongside the proposed School of Music.[63] By May 1894 he had established a drawing class using a room at the back of the Congregational Church.[64]

In early 1895 Isaac had classes running at the Technical Institute.[65] On 12 July 1895 he read a well-received paper on "Technical Instruction" at the Nelson Educational Institute opining that the:

> present system of education did not go far enough in so much that it did not really fit the children for anything beyond the store or a clerkship. He advocated greater consideration for the capacities and aptitude of the scholars; and more attention to character than to storing the memory.[66]

The nine-page paper, later printed for distribution, set out his philosophy not only of education but also life. He suggested: drawing be "thoroughly taught by competent drawing masters;" there be a "workshop or work room, where possible, be attached to every school;" and that Education Boards be "less finance committees, and were wholly composed of men really interested in the intellectual, and moral welfare of our children."[67]

The wider national interest in manual training continued to develop. In 1896 the New Zealand Minister of Education had reprinted "for use of Education Boards, School Committees and teachers" an 1895 Scotch Education Department report on "On Sloyd and Kindergarten Occupations in the Elementary School."[68] In 1899 the Department

[57] Isaac "Technical Education" p 3.
[58] Olsen "Isaac, Wilfrid Nelson" np.
[59] "Education: Technical Education" p 11.
[60] RAS *List of the Fellows of the Royal Astronomical Society* p 23.
[61] "Department of Scientific and Industrial Research (Report of The)" p 91.
[62] Isaac, Edmund Charles, Fl 1890-1930 :Photographs
[63] Isaac "Technical Education" p 3.
[64] "Technical Education" (5 May 1894) p 3.
[65] "[untitled]" (1 April 1895) p 2.
[66] "[untitled]" (13 July 1895) p 2.
[67] Isaac *Technical or Manual Instruction* pp 7-9.
[68] New Zealand. Department of Education, New

reprinted extracts from the 1898 "Final Report of. the Commission on Manual and Practical Instruction in Primary Schools under the Board of National Education in Ireland"[69] and the New Zealand Educational Institute published its own report on "Manual and Technical Instruction in Elementary Schools."[70]

The Manual and Technical Instruction Act 1900 (noted earlier) was implemented through regulations which were first made on 14 February 1902 and then revised on 3 December 1902. As well as details of attendance and claims for payment, it set out the subjects to be taught and the expectations – which for woodwork were under Regulation 24(a):

24.(a) (1) Woodwork
(b) Work in Iron
(c) The two hours a week required may include half an hour for the drawing necessary for these subjects, and must include at least one hour and a half of actual use of tools by the boys themselves working at the bench.
(d) The instruction in woodwork or work in iron must be in the use of the ordinary tools used in the handicrafts of wood or iron, and must be connected with the instruction in drawing-that is to say, the work must be from drawings to scale previously made by the pupils.
(e) The number of pupils at any one time receiving instruction in either of these subjects from one teacher must not exceed twenty-four.[71]

The creation of an appropriate book under the authority of the Education Department provided a clear approach using the "Sloyd" method for the use of teachers and schools. This was reinforced by the book's preface from Mr G Hogben, Inspector General of Schools.

Contents

Unlike Sandford and Owen's 1897 publication, Isaac's 1902 book has only a very brief outline of its philosophy, moving quickly to descriptions of the tools and their use. Rather than wood cuts of the individual tools, a series of black and white photographs illustrated the use of the tools. The images show a well-dressed man with wire-framed spectacles, tie, waistcoat and white shirt with cuff-links – based on other named photographs this was probably the author. The 30 exercises are illustrated with plan and isometrical projections, but rather than individually listing the tools, wood, drawing exercise and directions as in Sandford and Owen, Isaac provides a one or more paragraph description which covers all of these details. The book ends with a set of general notes, setting out: requirements for the work benches (including a drawing); tools; how to grind and set chisels, gouges and plane-irons; preparation of glue; care of tools; a selection of appropriate UK published textbooks; and finally the plan for a woodwork class-room suitable for 24 pupils.

Sanford and Owen Compared to Isaac

A comparison of the exercises in two publications highlights similarities and differences. Both provide background information as discussed early. Each has exercises for the student to learn the use of the different tools or for the making of different joints (Sandford and Owen 18, Isaac 23) and exercises to construct a named item (18 and 7 respectively). There appears to be only one common named construction – "Making an Oxford Frame" – a type of picture frame using simple joints, rebating for the glass and chamfering for appearance. However, the approach and final product differ between the

Zealand. Education Review Office, and New Zealand. Ministry of Education *Manual Training in Primary Schools*

[69] New Zealand. Department of Education *Manual and Practical Instruction*

[70] New Zealand Educational Institute *Report on Manual & Technical Training*

[71] New Zealand. Department of Education *Regulations for Manual and Technical Instruction* reg 24(a).

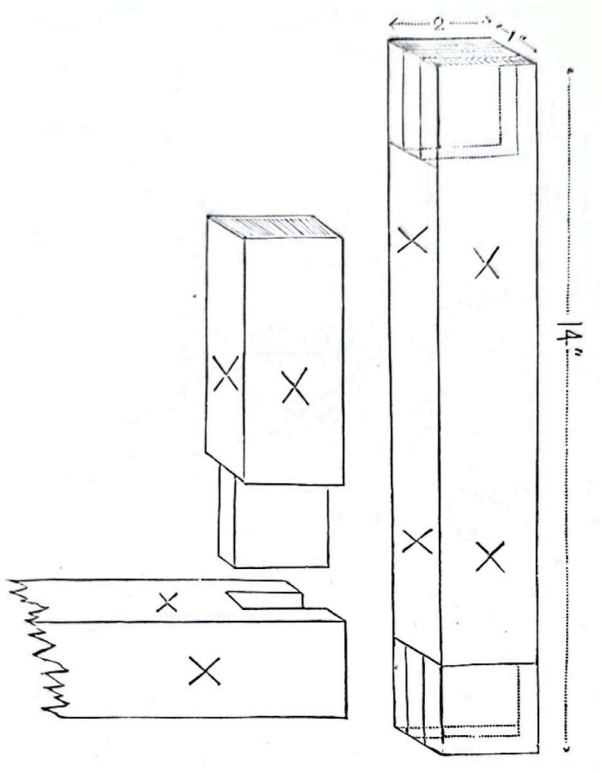


Figure 3: Sandford & Owen *Manual Training in Woodwork* Exercise 16: Open Mortise and Tenon Joint.

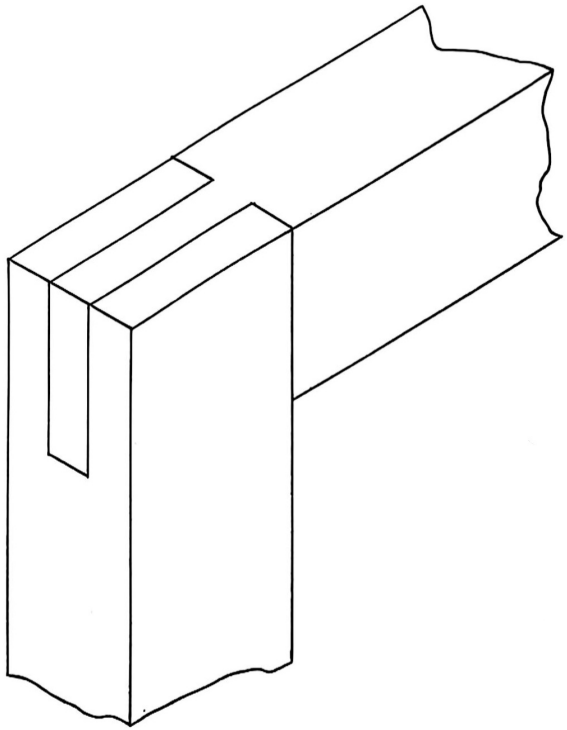


Figure 4: Isaac *Handwork for Schools* Exercise 22: Open Tenon-and Mortise Joint.

two books.

The tools and techniques which the student is expected to learn differ only slightly between the books, although the approach and illustrations are clearly different. For example the above figures show the "Open Mortise" exercise. Figure 3 is Exercise 16 in Sandford and Owen,[72] while Figure 4 is Exercise 22 in Isaac.[73] Isaac's drawing is crisper and more professional, but leaves any decision as to the dimensions up to the teacher or student. The text provided for each exercise is provided in the Appendix, where the difference in approach for the two publications can be clearly seen.

Conclusion

It has been shown the claim that Isaac's 1902 book was the earliest New Zealand published relating to carpentry is incorrect - the honour belongs to the 1897 work of Sandford and Owen. However, the two books both provided a range of exercises to help the schoolchild develop their woodworking skills. The practical skills were seen to complement, rather than replace, the more traditionally taught academic skills.

The authors' backgrounds show the importance of the links to the United Kingdom for timber construction in the late-nineteenth and early-twentieth centuries. They document and illustrate the expectations that such practical training would create a more rounded able school graduate for the future benefit of the nation.

[72] Sandford & Owen *Manual Training in Woodwork* pp 61-63.

[73] Isaac *Handwork for Schools* pp 38-39.

APPENDIX: Example of an exercise

EXERCISE 16. OPEN MORTISE AND TENON JOINT [Sandford and Owen[74]]

Tools. As for Exercise 15, with the addition of a mortise gauge and a mortise chisel.

[**Exercise 15**: As in previous exercise. … **Exercise 11**: Same as Exercise 10, with the addition of the hand and tenon saws and setting-out knife. **Exercise 10**: Same as Exercise 9 with the addition of a bevel and a large chisel. **Exercise 9**: Jack plane, gauge, rule, pencil, square]

Wood. Kauri, 14½"·x 2¼" x 1⅛.

Drawing. As for Exercise 12.

[Exercise 12: Make working drawings of this exercise, and draw them 6" to 1' (half size). The exercise must then be done from these drawings and not from the printed ones above.]

Directions

(1) Plane up the wood to the sizes shewn. Be particular to make the face *edge* a true right angle with the face *side.* Though the wood is not to be cut into two pieces until the finish of the exercise, still the pupil must n1ark it in the centre where it is to be cut. Face marks in this, and in all similar exercises, must be made on each half so that they can be seen when the work is complete.

(2) Mark off on the face *edges 2"* from each end. Square over on both *sides* of one end for the tenon, and over both *edges* of the other end for the mortise.

(3) Set the mortise gauge teeth as wide as the chisel to be used (¼"). Then set the head of the gauge so that the mortise will come in or near the middle of the edge of the wood. Now gauge the work, using the gauge in the same manner as the marking gauge.

(4) Cut *outside* the lines at the end marked tenon, and *inside* the lines marked mortise. The hand saw will be the best to use in sawing with the. grain of the wood.

(5) Use the mortise chisel to cut out the wood of the mortise. Then cut the piece in two at the centre line, and bring the two halves together, face sides uppermost and face edges together. If well sawn they will fit without any paring with the chisel.

EXERCISES 22 AND 23. Open Tenon-and-Mortise Joint, or Bridle Joint [Isaac[75]]

In the working of these exercises a new tool, the mortise-gauge, is introduced. Pupils therefore should have some preliminary practice with it on pieces of waste wood. Accustom pupils to use the gauge with either hand. The usual practice in setting out bridle and mortise joints is to divide the thickness of the wood into three equal parts. The tenon should be about one third of the thickness of the wood. Aim at making the joint with the saw alone, not using the chisel except for cutting away the waste wood of the mortise. The best way to saw tenons is shown in Fig. 52. If the wood is placed in the vice at the inclination shown, two guiding lines are visible. Saw down to the shoulder, keeping the saw horizontal; reverse the wood in the vice and saw down to the opposite shoulder. Then place the wood vertically in the vice and saw down to the shoulder-line, the saw again being used horizontally. Finally, saw in the shoulder so as to cut away the waste wood.

[74] Sandford and Owen *Manual Training in Woodwork* pp 58, 62–63.

[75] Isaac *Handwork for Schools: Woodwork* p 39.

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