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## Report on the Various Trades within the County Borough Requiring Technical Instruction: Report 2.

Technical Education Committee

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No. 2.

TECHNICAL EDUCATION COMMITTEE

FOR THE

COUNTY BOROUGH OF DUBLIN.

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# REPORT

*On the Various Trades within the County  
Borough requiring Technical Instruction ;  
the Number of Members and of Apprentices  
therein.*

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*Recommendations in regard to a Scheme  
of Technical Education.*

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DOLLARD, PRINTINGHOUSE, DUBLIN.

1903.

TO THE TECHNICAL EDUCATION COMMITTEE  
FOR THE COUNTY BOROUGH OF DUBLIN.

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GENTLEMEN,

Your Committee have set aside a capital sum of £5,000 in aid of equipment for instruction in Science and Art in the Secondary Schools, and have thereby laid a foundation which will secure a higher educational level in the class of students that will eventually reach the Technical School. This is the first stage in the Scheme of Technical Instruction for the County Borough, and the next step is to determine what provision shall be made for Technical Instruction, under the direct supervision and control of your Committee, in the following departments:—

1. Science.
2. Art.
3. Technology (instruction in the application of science and art to industries or employments).
4. Commercial subjects.
5. Domestic Science and Women's Work.

In considering this subject it is all important at the outset to estimate the number of those who are likely to avail of Technical Instruction. Such persons will, in the main, be those practising the various trades, and those apprenticed to them, and I have therefore made inquiry into the more important trades, the numbers therein, the number of apprentices, and the conditions of apprenticeship. The figures given below have been obtained from the secretaries or other responsible officials of the various trade organisations, supplemented by inquiry from the principal employers, with a view to obtaining an estimate of the numbers in each trade who do not belong to any trade organisation.



## GROUP "A"—Building Trades.

### 1.—CARPENTERS.

Number in Trades Unions	..	1800
Non-Unionists	..	300
Apprentices	..	500

The conditions of apprenticeship vary; the term is six years, and the apprenticeship is sometimes to the Employer, sometimes to the men themselves.

### 2.—BRICKLAYERS & MASONS.

Number in Trades Unions	..	1123
Non-Unionists	..	260
Apprentices	..	100

These trades are not clearly distinguished from one another in Dublin. They are very confined as regards admission, and a prohibitive fee of £30 is required from anyone not the son or grandson of a member of the trade. The term is seven years and apprenticeship is in all cases to the Society.

### 3.—PLASTERERS.

The Number in Trades Unions	..	300
Non-Unionists	..	60
Apprentices	..	50

The term is seven years, and apprenticeship is solely to the tradesman, and is confined to the sons of tradesmen.

The Secretary of the Trades Society writes that a course in a Technical School would reduce the term of apprenticeship.

### 4.—PAINTERS.

Number in Trades Union is	..	640
Non-Unionists	..	250
Apprentices	..	200

There are no fixed rules as to apprenticeship, but where indentures are entered the term is usually seven years.

MR. E. BONE, Secretary of the Amalgamated Society of Painters, writes:—"If an apprentice is indentured it is usually for seven years. I do not imagine that a course in a Technical School would reduce the length of such

term, but if the lad showed ability it is probable that the wages specified in the indenture would be increased. Such, in fact, happened to my second son, whose wages were considerably increased. I am aware also of other like cases.”

#### 5.—SLATERS & TILERS.

The Number in Trades Union is	120
Non-Unionists .. ..	90
Apprentices .. ..	25

The apprenticeship is confined to sons of the trade members, and the term is seven years.

The Secretary states that a course in a Technical School would considerably reduce the term of apprenticeship;

#### 6.—STONECUTTERS.

The Number in Trades Union is	210
Non-Unionists .. ..	50
Apprentices .. ..	45

Apprenticeship is practically confined to sons of members of the trade ; term, seven years.

#### 7.—GLAZIERS.

The Number in Trades Union is	60
Non-Unionists .. ..	100
Apprentices .. ..	10

A large number of outside workers are unskilled, and are mere handy men. The better class workers are confined to shops.

#### 8.—PLUMBERS.

The Number in Trades Union is	220
Non-Unionists .. ..	130
Apprentices .. ..	50

Term of apprenticeship is seven years.

This trade should more properly belong to a School of Hygiene and Sanitary Engineering.

#### 9.—BUILDING SURVEYORS.

This trade, which is a highly skilled one, has no trade organisation, and the number would probably not exceed 50. They are not separately returned in the Census.

**GROUP "B"—Engineering (Mechanical and Electrical)  
and Metal Work.**

**1.—ENGINEERS.**

The Number in Trades Unions is	550
Non-Unionists .. ..	150
Apprentices .. ..	90

This term includes fitters, turners, and some smaller classes.

Apprenticeship is to employers generally, without indentures; term, five years.

**2.—BOILER MAKERS.**

The Number in Trades Union is	160
Apprentices .. ..	35

The term of apprenticeship is five years, and is served with employer.

I find no Non-Unionists in this trade.

**3.—SHIPWRIGHTS.**

The Number in Trades Union is	100
Non-Unionists .. ..	50
Apprentices .. ..	30

The term is seven years and is served with employers.

Most of these men are employed in connection with the new Dockyard Company, the Docks Board, and the Grand Canal Company.

The Secretary of the Associated Shipwrights' Society writes:—"Technical Education is a want long felt by our trade in this city. Our Society give every encouragement to apprentices who join such classes, a prize being offered to each apprentice who obtains a pass in Naval Architecture."

**4.—MILL MACHINISTS.**

The Number in Trades Union is	80
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I do not find any non-unionists or apprentices.

**5.—IRON-FOUNDERS.**

The Number in Trades Union is	100
Non-Unionists .. ..	60
Apprentices .. ..	12



The term of apprenticeship is generally five years, but there are no fixed rules or conditions of apprenticeship.

Moulders and other workers in cast-iron are included under this heading.

#### 6.—BLACKSMITHS.

The Number in Trades Union is		80
Non-Unionists	.. ..	150
Apprentices	.. ..	10

These tradesmen are largely recruited from strikers and helpers generally, and the Census return (703) includes many who have no real claim to be classed in the trade.

#### 7.—TINSMITHS & SHEET METAL PLATE WORKERS.

The Number in Trades Union is		58
Non-Unionists	.. ..	100
Apprentices	.. ..	20

Apprenticeship to employer; term, 7 years.

#### 8.—STATIONARY ENGINE DRIVERS.

Number of Trades Union is	.. ..	80
Non-Unionists	.. ..	100

No Apprentices.

Most of these men are employed first as helpers, and gradually grow to understand the engines, and in some cases to be able to keep them in repair on a minor scale.

#### 9.—BICYCLE MAKERS.

There is no Trades Union.		
Non-Unionists	.. ..	170

No Apprentices.

#### 10.—FARRIERS.

The Number in Trades Union is		100
Apprentices	.. ..	20

This trade borders on blacksmith work on the one side and veterinary work on the other, and it is doubtful whether it should be included in this group of trades allied to engineering.

## 11.—WHITESMITHS.

The Number in Trades Union is		40
Non-Unionists	.. ..	30
Apprentices	.. ..	8

## 12.—BRASS-FOUNDERS.

The Number in Trades Union is		160
Apprentices	.. ..	20

Term of apprenticeship, 7 years.

## 13.—GAS-FITTERS &amp; BRASS-FINISHERS.

This trade usually goes with plumbers, but the number of men employed at gasfitting solely is about 100

## 14.—ELECTRICIANS.

The Number in Trades Union is		70
Non-Unionists, about	.. ..	30

It is impossible to give accurate figures with regard to this trade.

In the Telegraph and Telephone and Tramway services there are employed about 1,000 persons whom education in Technical Classes would benefit.

## 15.—CUTLERS (Scissors, Saw, File and Tool-Makers).

Number in Trade	.. ..	30
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## 16.—WIREWORKERS.

Number in Trade	.. ..	30
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## 17.—COPPERSMITHS.

Number in Trade	.. ..	50
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## 18.—PATTERN-MAKERS.

Number in Trades Union	.. ..	25
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## 19.—OPTICAL &amp; SURGICAL INSTRUMENT MAKERS.

Number in Trade	.. ..	18
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MESSRS. YEATES state there are very few of this trade in the city. They have six young men, and they do not think there are as many more. Some short time ago four men left their employment, and could not get any work in Dublin, so had to go over to England.

MESSRS. FANNIN have five men, no apprentices. Not much work done in Dublin.

### GROUP "C"—Printing and Allied Trades.

#### 1.—PRINTERS (TYPOGRAPHICAL).

The Number in Trades Union is	1000
Non-Unionists .. ..	200
Apprentices .. ..	150

Apprenticeship to employer ; term, 7 years. The extra number returned in the Census is due to the inclusion of employers.

#### 2.—PRINTERS (LITHOGRAPHIC).

The Number in Trades Union is	104
Non-Unionists .. ..	30
Apprentices .. ..	20

Apprenticeship is to the employer ; term, 7 years.

#### 3.—STEREOTYPERS.

The Number in Trades Union is	45
Non-Unionists .. ..	12
Apprentices .. ..	12

#### 4.—NEWSPAPER MACHINISTS.

Number in Trades Union is ..	45
Non-Unionists .. ..	35

#### 5.—BOOKBINDERS.

The Number in Trades Union is	130
Non-Unionists .. ..	40
Apprentices .. ..	30

Apprenticeship is to employer ; term, 7 years.  
This estimate does not include pamphlet-binders, a trade largely occupied by women.

## 6.—PROCESS PRODUCERS.

The Number in the Trade is .. 30

This Trade includes all occupied at etching and other processes of illustration.

## 7.—PHOTOGRAPHERS.

It is not easy to give an estimate of the number in this trade and its accompanying processes, nor to draw an exact line between the amateur and professional. Women are employed to a great extent in various departments.

The Census return is 95 men, 96 women.

## 8.—DIE SINKERS &amp; ENGRAVERS.

Number in Trade .. .. 28

**GROUP "D"—Coachbuilding; Special Woodwork and Furniture Trades.**

## 1.—COACH MAKERS (Cars, Carriages, &amp;c.).

The Number in Trades Union is 300  
 Non-Unionists .. .. 200  
 Apprentices .. .. 60

Term of apprenticeship, 7 years.

## 2.—RAILWAY CARRIAGE MAKERS.

The Number in Trades Union is 126  
 Apprentices .. .. 15

Apprenticeship to firm; term, 5 years.

The Census returns only 14 in this trade, but at the Inchicore Works alone 86 tradesmen are employed and 10 apprentices.

## 3.—WAGGON BUILDERS.

The Number in Trades Union is 80  
 Apprentices .. .. 12

Term of apprenticeship, 5 years.

## 4.—CABINET MAKERS.

The Number in Trades Union is	160
Non-Unionists .. ..	100
Apprentices .. ..	16

This trade is over-estimated in the Census.

## 5.—COOPERS.

The Number in Trades Union is	320
Non-Unionists .. ..	200
Apprentices .. ..	54

Term of apprenticeship, 7 years.

## 6.—WOOD CARVERS.

The Number in the Trade is ..	50
Apprentices .. ..	8

## 7.—CARVERS &amp; GILDERS.

The Number in the Trade is ..	60
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## 8.—UPHOLSTERERS.

The Number in Trades Union is	80
Non-Unionists .. ..	20
Apprentices ] .. ..	10

## 9.—CARPET PLANNERS.

The Number in Trades Union is	40
Apprentices .. ..	10

**GROUP "E"—Clothing, Bootmaking, Leather Work.**

## 1.—TAILORS.

The Number in Trades Union is	700
Non-Unionists .. ..	350
Apprentices .. ..	80

The term of apprenticeship is variable, but generally 4 years.

## 2.—BOOT &amp; SHOE MAKERS.

The Number in Trades Union is	220
Non-Unionists .. ..	600
Apprentices .. ..	40

Terms of apprenticeship, 5 years.



## 3.—BOOT FACTORY HANDS.

The number in Trade	..	260
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There are also a large number of girls employed as hands, about 80 in the factory of Messrs. Winstanley. The Manager of that firm states that he has to send thousands of uppers every year to England to be closed, which he could keep at home if girls were trained to the work.

## 4.—CURRIERS.

The Number in Trades Union is		40
Non-Unionists	.. ..	20
Apprentices	.. ..	8

## 5.—SADDLERS &amp; HARNESS MAKERS.

The Number in Trades Union is		130
Non-Unionists	.. ..	100
Apprentices	.. ..	30

Terms of apprenticeship, 7 years.

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**GROUP " F "—Sundry Trades.**

## 1.—BAKERS.

The Number in Trades Union is		330
Non-Unionists	.. ..	350

## 2.—CONFECTIONERS.

The Number in Trade is	..	100
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## 3.—BOTTLEMAKERS.

The Number in Trades Union is		104
Apprentices	.. ..	20

## 4.—BRUSHMAKERS.

The Number in Trades Union is		92
Apprentices	.. ..	15

## 5.—BASKET MAKERS.

The Number in Trades Union is		40
Apprentices	.. ..	12

These figures do not include blind workers.

## 6.—SILVERSMITHS.

The Number in the Trade is .. 92

## 7.—HAIRDRESSERS.

Number in Trades Union ..	86
Non-members ..	50
Apprentices and Improvers ..	120

The first-class trade is mostly in the hands of foreigners.

A class in this department has recently been started in Belfast with much success.

## 8.—WATCHMAKERS.

Number of Members in Trade .. 150

Very few apprentices, and no fixed conditions.

MESSRS. FRENGLEY BROS. write as follows :—“ There are in Dublin about 50 watch and clock-making establishments. There are now, with perhaps one or two exceptions, no watches or clocks “made” in Ireland, and what is termed as “made” is in many cases got over in the rough and only “finished” here. The watch and clock-making industry has of latter years become so much centralised in certain places, and, like many other arts, the machine enters so largely into the production that it would not pay a youth to apprentice himself to watch or clock-making. But no matter how they are produced, or how much the machine is used, there will always be a demand for men who can renovate them and who can fit a new part properly, when the old one is worn beyond repair. Unfortunately it is becoming more difficult every day to procure such men; Many a youth may spend five or seven years in a shop, and know very little at the end of that period. He learns perhaps to take a watch or clock to pieces and clean it, and get it successfully together again. But should a part want repairing or replacing, or should there be a part missing and a new one required, he has no knowledge of how to treat either repair or new part, and so begins to botch, and the article is in many cases spoiled. He is no good to himself or anyone else, and his work becomes a burthen to him. There can be no doubt that a good Technical Class on watches and clocks would be a boon to youths about to adopt that profession—a class where they could obtain a thorough knowledge of watches and clocks in theory and practise, of their various constructions, the



proper technical names of their various parts, and of the relative functions of those parts one to another. The various escapements and their actions should be explained, the construction of wheels and pinions, and their relation to one another, and they should be taught how to set out the escapement on paper. We know that such a Technical Class in Dublin would be a great boon to apprentices, and even to young men who are already out of their time, and we would wish such an undertaking every success."

### 9.—ORGAN BUILDERS.

Number in the Trade and its departments (Organ Building, Joinery, Nickel Pipe-making, Wood Pipe-making, Bellows, &c.) about 50.

This is a noted Dublin industry, and organs manufactured by Messrs. Telford and other Dublin firms have been erected even in various churches and mansions in England.

### 10.—GUNSMITHS.

Number in Trade	..	..	20
Apprentices	..	..	2
Terms of apprenticeship, 7 years.			

### 11.—SUGAR-REFINERS.

Number in trade is about	..	20
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## SUMMARY.

### GROUP "A.": BUILDING TRADES.

	TRADESMEN	APPRENTICES	TOTAL
1. Carpenters	.. 2100	.. 500	.. 2600
2. Bricklayers & Masons	1383	.. 100	.. 1483
3. Plasterers	.. 360	.. 50	.. 410
4. Painters	.. 890	.. 200	.. 1090
5. Slaters & Tilers	.. 210	.. 25	.. 235
6. Stonecutters	.. 260	.. 45	.. 305
7. Glaziers	.. 160	.. 10	.. 170
8. Plumbers	.. 350	.. 50	.. 400
9. Building Surveyors	.. 50	.. —	.. 50
			6743



GROUP "B.": ENGINEERING (MECHANICAL  
AND ELECTRICAL) AND METAL WORK  
TRADES.

	TRADESMEN		APPRENTICES		TOTAL
1. (Fitters and Turners and some smaller classes) ..	700	..	90	..	790
2. Boiler Makers ..	160	..	35	..	195
3. Shipwrights ..	150	..	30	..	180
4. Mill Machinists ..	80	..	—	..	80
5. Iron Founders ..	160	..	12	..	172
(Moulders)					
6. Blacksmiths ..	230	..	10	..	240
7. Tinsmiths and Sheet Metal Plate Workers	158	..	20	..	178
8. Stationary Engine Drivers ..	180	..	—	..	180
9. Bicycle Makers ..	170	..	—	..	170
10. Farriers ..	100	..	20	..	120
11. Whitesmiths ..	70	..	8	..	78
12. Brass Founders ..	160	..	20	..	180
13. Gasfitters ..	100	..	—	..	100
14. Electricians ..	100	..	—	..	100
15. Cutlers ..	30	..	—	..	30
(Tool, Scissors, File and Saw Makers)					
16. Wire-workers ..	30	..	—	..	30
17. Coppermiths ..	50	..	—	..	50
18. Pattern Makers ..	25	..	—	..	25
19. Optical and Surgical Instrument Makers	18	..	—	..	18
					2916

GROUP "C.": PRINTING & ALLIED TRADES.

	TRADESMEN		APPRENTICES		TOTAL
1. Printers (Typo.) ..	1200	..	150	..	1350
2. Printers (Litho.) ..	134	..	20	..	154
3. Stereotypers ..	57	..	12	..	69
4. Newspaper Machinists ..	80	..	—	..	80
5. Book-binders ..	170	..	30	..	200

	TRADESMEN		APPRENTICES		TOTAL
6. Process Workers, Etching, &c.	.. 30	..	—	..	30
7. Photographers	.. 95	..	—	..	95
8. Die-sinkers and En- gravers	.. 28	..	—	..	28
					<hr/> 2006

GROUP "D." SPECIAL WOOD-WORK, FURNI-  
TURE AND FURNISHING TRADES, COACH-  
BUILDING, &c.

	TRADESMEN		APPRENTICES		*TOTAL
1. Coachmakers (Cars, Carriages, &c.)	.. 500	..	60	..	560
2. Railway Carriage Makers	126	..	15	..	141
3. Waggon Builders	.. 80	..	12	..	92
4. Cabinet-makers	.. 260	..	16	..	276
5. Coopers	.. 520	..	54	..	574
6. Wood Carvers	.. 50	..	8	..	58
7. Carvers and Gilders	.. 60	..	—	..	60
8. Upholsterers	.. 100	..	10	..	110
9. Carpet Planners	.. 40	..	10	..	50
					<hr/> 1921

\* GROUP "E.": CLOTHING & LEATHER TRADES.

	TRADESMEN		APPRENTICES		TOTAL
1. Tailors	.. 1050	..	80	..	1130
2. Boot & Shoe Makers	820	..	40	..	860
3. Boot Factory Hands	260	..	—	..	260
4. Curriers	.. 60	..	8	..	68
5. Saddlers & Harness Makers	.. 230	..	30	..	260
					<hr/> 2578

## GROUP "F.": SUNDRY TRADES.

	TRADESMEN		APPRENTICES		TOTAL
1. Bakers	..	680	..	—	680
2. Confectioners	..	100	..	—	100
3. Bottlemakers	..	104	..	20	124
4. Brushmakers	..	92	..	15	107
5. Basket Makers	..	40	..	12	52
6. Silversmiths	..	92	..	—	92
7. Hairdressers	..	136	..	120	256
8. Watchmakers	..	150	..	—	150
9. Organ Builders	..	50	..	—	50
10. Gunsmiths	..	20	..	2	22
11. Sugar Refiners	..	20	..	—	20
					1653
			General Total	..	17,817

The above total does not survey the whole industrial field available for Technical Education. An extended scheme of **Other Trades and Crafts.** Technical Instruction should take into consideration the existence and the technical development of many minor trades, such as cement-manufacture, nail-making, brick-and-tile-making, boat-building, glove-making, hat manufacture, silk weaving, and the small remnant of work in textile fabrics still surviving in our midst. The branches of industry, also, which are scarcely to be called trades, but are more properly termed artistic crafts, deserve full recognition in any scheme of Technical Instruction: gold and silver smith's work, wood carving, repousse work, enamel work, glass staining, &c., would come under this heading, and must be taught side by side with Art and Design, for, "the artistic faculty wherever detected is of too great value to the community to be lost for want of training."



Large and properly equipped chemical laboratories would be of vast use to those engaged in the brewing industries, and also to those occupied in chemical works—dyers, soap boilers, alkali workers, &c. To classes in building construction would come large numbers of clerks and assistants from Insurance offices, as some such Technical Instruction is necessary side by side with their commercial training; engineers, auctioneers, land agents and architects would avail of instruction in Land Surveying; and architects' apprentices would gain materially by being brought in touch with the workshop practice of the various building trades, and many other trades, such as hammered iron work, shop-fitting, wood-carving, etc.

Mr. Llewellyn Smith, in his report to the London County Council on the needs of London in regard to Technical Education, has attempted to indicate the local distribution of London industries with a view to providing special technical instruction suitable to different districts.

On similar lines I have made enquiry as to the districts in which the members of particular trades mainly reside. I find that Carpenters chiefly reside east of a line drawn from Brunswick-street to Berkeley-street. Printers dwell mostly on the North side of the city, principally in the North Dock, Mountjoy, Rotunda, and Inn's Quay Wards. Plasterers are mainly to be found in the Southern districts of the city, and Metal-plate workers also for the most part dwell on the Southern side. Engineers are chiefly to be found on the Western side, from Bridge-street to Inchicore, and Shipwrights, of

course, dwell altogether in the extreme East of the city, both on the North side of the river and in Ringsend.

I find, however, that the members of most trades are scattered in all directions over the city, and that there is nothing to point the utility of specializing Technical Instruction in particular districts.

Technical Education, in its main intention, is for the promotion of more intelligent industry and higher craftsmanship; but the **Commercial Education.** definition in the Act of 1889 also includes Commercial Education, and your Committee must make due provision for the training suitable to a commercial career. The Syllabus should include such subjects as the following:—

Arithmetic and Commercial Reckoning.

Book-keeping and Commercial Correspondence.

Commercial Geography; Commercial History.

Accountancy Operations.

Study of Merchandise and Science of Commerce.

Usages and Calculations of Merchandise.

Caligraphy

Shorthand and Typewriting.

English.

French.

German.

Spanish. (This language is of considerable commercial importance, as it is practically the language of the whole South American Continent).

The report on Commercial Education, issued by the London County Council in 1899 (p. xv.), gives valuable specific recommendations, which may aptly serve as a



guide in Dublin. One of these recommendations is, that the Board should confer with representatives of commercial life, with a view to the recognition of certificates of commercial proficiency. It is specially important that a similar conference should be held by your Committee, as there are no standard commercial examinations in Ireland, and as the examinations and certificates of the London Society of Arts are insufficiently known and insufficiently appreciated in Ireland.

The Rathmines School of Commerce is on too small a scale to affect the demand in Dublin for commercial training, and the applications for admission to the Commercial Classes in the City of Dublin Technical Schools increased so considerably during the present session that the accommodation was inadequate, and large numbers were refused admission.

At present Dublin affords practically no instruction in Domestic Science and the other branches of Women's work. The Royal Irish Association for the Training and Employment of Women will only train teachers, and it will be for your Committee to supply instruction to the masses generally. Instruction would be necessary in the following subjects:—

**Domestic Science  
and  
Women's Work.**

1. Dressmaking,
2. Millinery,
3. Needlework and Embroidery,
4. Cookery,
5. Laundry work,
6. Lace-making.



It would be advisable to have both day classes and evening classes in these subjects, and also to have occasional courses of lectures and demonstrations open to the general public at a small fee. More especially would it be advisable to have district classes in this department so as to bring instruction nearer to the home, and these classes might fittingly be under the immediate supervision of a committee of ladies.

Before determining what provision should be made for the teaching of Science and Art it is necessary that your Committee should decide to what extent and on what system building accommodation will be provided. Reduplication of classes, and the consequent over-lapping of expenditure on educational and clerical staffs, must be avoided, and, if schools are to be established in different districts of the city, each should be devoted to instruction in a particular group of allied trades. In London, where there is a large area, and where particular trades are located in particular districts, this system works satisfactorily; but in Manchester there is a Central Municipal Technical Institute, and Liverpool now concentrates in one Central Institute the Technological Instruction which had previously been conducted in several different schools. Belfast, with an area more than twice as large as the present extended Dublin area, has also decided in favour of a Central Technical School.

Technical Education means instruction in Science and Art, and in their application to industries, and the ideal system is one in which Science and Art radiate immediately and directly on the workshop, and are there

absorbed. Anyone who has had the conduct of a technical school will understand the difficulty of inducing those who attend a trades' class to also attend the sister branches of Art and Science, and it would be impossible unless the instruction in Science and Art were in close proximity to the workshop practice. In a Building Construction School, whilst Science is mainly requisite, Art is also needed in every branch. Art is the soul in the printing craft and in its allied branches, whilst Science also helps in the photo-mechanical and other processes. Scientific construction and artistic design are the salient requisites in the furniture trades. In such a monotechnic system as would locate different branches of Technological Instruction in different districts, it would therefore be necessary to duplicate the Science and Art Classes, and this would require a money expenditure far exceeding the grant allocated to Dublin. On the other hand, in a large Central Institution, all the Technological teaching, together with the requisite instruction in Science and Art, could be conducted more satisfactorily and with far less expense.

A sum of about £80,000 would be required for building.

The Corporation is empowered to raise a **Building.** rate of two pence in the pound for Technical Instruction (1d. under the Act of 1889; 1d. under the Act of 1899), and this would produce annually about £6,000. On the security of the rate the requisite money could be borrowed, and there would be a sufficient sinking fund over and above the interest. The Belfast Corporation have obtained the money for building on the security of the rate, and this constitutes the contribution of the Local Authority in aid of Technical Instruction.



The Equipment of Technical Schools would require a considerable sum, probably about £30,000.

**Fund for Equipment.** Dublin is happily situated in this respect, as about £22,000, being the unexpended Departmental allocation for the triennial period, 1900-1903, is available for that purpose, and may not be expended on building operations.

It is necessary that a School of Design should form an important feature of the instruction in Art, and that the teachers should thoroughly understand the application of the design and the varying treatment according to the various materials. The earlier craftsmen designed their own work, and hence the artistic co-relation between their designs and the materials that they worked upon. For workshop instruction in the various crafts the teachers should be selected who also show a knowledge in design.

A portion of the Central School should be devoted to a Technical Museum, which would contain specimens or copies of first-class work in different industries. These examples, which could be procured with little difficulty or expense, would train the mind and eye of the artisan in the same manner as art models educate and influence the student of Art. High-class work by pupils of the School might also be exhibited in this Museum.



The experience at present in the Technological Section in Kevin-street is that the working of the classes is delayed and the teacher hampered by the fact that many of the pupils are backward in such elementary subjects as writing, English composition, arithmetic and mensuration. Pupils who have acquired a certain workshop proficiency are often debarred from competing in the examinations of the City and Guilds of London Institute, or, if admitted, hopelessly fail, by reason of this deficiency in elementary education. I would, therefore, suggest—

- Admission of Pupils.**
- (a) That no pupil be admitted under the age of 15 years;
  - (b) That there should be either an Entrance Examination, or that no pupil should be admitted without evidence of general educational acquirement.

It is impossible thus early in the development of a Scheme of Instruction to determine the most suitable system for the provision of Prizes and Scholarships. Every inducement should be offered to pupils to complete a full three years' course in the Technical School instead of leaving, as is too frequently the case, at the end of a single session, and every facility should be afforded which will enable the earnest pupil to reach the highest rung of the educational ladder.

I would suggest that the fees of all the pupils should

be set aside as a fund for Prizes and Scholarships, and that it should be apportioned on the following basis:—

1. Prizes varying from £2 to £5, on the result of yearly examinations in the theory and practice of each particular trade, together with its allied branch of Art or Science.
2. Scholarships for Day Students:—  
Junior, £20, for three years; Intermediate, £30, for two years; Senior, £40, for one year.
3. Scholarships for Evening Students:—  
Junior, £10, for three years; Intermediate, £15, for two years; Senior, £20, for one year.

The Junior and Intermediate Scholarships should be dependent upon the successful pupils continuing their course of study and passing the higher grade of examinations in each succeeding year. The Senior Scholarships should be dependent upon the successful pupil pursuing a more advanced course in the College of Science, the School of Art, or such other institution as your Committee may approve.

A due proportion of the fund should be allocated to Prizes and Exhibitions in connection with Commercial subjects and with the classes in Domestic Economy and Women's Work.

This report, and the suggestions which accompany it, are respectfully placed before your Committee by

Your obedient servant,

LOUIS ELY O'CARROLL,  
*Secretary.*

*March, 1903.*



bricklaying workshops of Finsbury, the Polytechnic, People's Palace, and Borough-road, train the bricklayer in the art of "brick-cutting," for which the modern treatment of ornamental brick-work in buildings creates a demand, and which only a small minority of bricklayers can perform. Again, in carpentry, the geometry and construction of a hand-railing and staircasing is a special branch known only to a minority of carpenters. It is taught with great success at the Polytechnic workshop. The cabinet-making trade furnishes us with other examples.

I need hardly point out that practical workshop teaching, if carried out on these lines would be almost useless to the amateur, assuming as it does a previous practical acquaintance with the trade.

The relative importance of the above three main purposes of the technical workshop varies in different trades. For bricklayers the third is the most important. For boot and shoe makers, in the opinion of the Secretary of the National Union of Boot and Shoe Operatives, the chief function of the technical school is to counteract the tendency to division of labour. A man should aim not at becoming a mere expert "clicker," but being able to make a hand-sewn boot throughout, this being the best training even for the machine industry. Again, for painters and decorators the chief service that the technical school can do is to train in art, including design. If practical house decoration be included at all (as at the South London Technical Art School), it must be chiefly as illustration of the teaching of design. As the Secretary of the Amalgamated Society of House Decorators and Painters points out, it is impossible to get the necessary variety of work on a large scale in the technical school to be in any way a substitute for trade practice.

Many of the trade societies are likely (in the opinion of their prominent members) to be willing to do their full share to encourage technical education supplied by the County Council by organising the demand, *e.g.*, by distributing advertisements of classes among their numbers, by giving encouragement to learners and apprentices to attend, &c., &c.

I wish to emphasise the importance of this point. The organisations of workmen might give invaluable assistance to any sound scheme of technical education, by acting as conduct pipes to bring the existence and advantages of the classes systematically before their members. This is a work which the County Council cannot do directly, but which could be easily done through the agency of trade societies.