OPERATING A TRADE SCHOOL AS A COMMERCIAL SHOP.

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THE primary purpose of a trade school is to teach the students woodwork, iron work, and other industrial work, but it is also very desirable to have the records at the end of the year show a profit. The word profit is not used in its ordinary sense of excess of the selling price over the cost of articles manufactured, but refers to the excess of returns over all expenditures for supplies consumed, labor employed, and power expended, irrespective of teachers' salaries, which remain the same whether commercial work is done or not. After a school has demonstrated that money appropriated for its maintenance and support has not been spent wholly upon exercise work of debatable value, but that a fair rate of interest is being returned through the manufacture and sale of commercial articles, provincial officials will make appropriations sufficiently large to meet all necessary demands. Such a profit tends also to insure the moral support of provincial officials.

The real purpose of a trade school is to teach boys trades. If this teaching is done in a school which never shows a profit it is evident that the students fail to get an important part of their training—the training which prepares them to manufacture articles for prices comparing favorably with current market prices and at the same time yielding a reasonable gain.

Contract work during the overtime periods is the most satisfactory way of getting out good work, and a great deal of it, in a hurry. When students learn that they are to receive a certain amount of money as soon as a piece of work is finished, they will put in more time and work faster than if they were working on time wages and receiving pay for about one hour of overtime a day. The program, if possible, should be so arranged that all school work may be finished by noon, leaving the whole afternoon as overtime for commercial work. The rate of pay allowed a student for a piece of work should be the same that a local carpenter would receive for doing the same grade of work. A Grade V student and a Grade VII student should get the same pay for like jobs, because it will take the student in Grade V

longer to finish his work than it will take the student in Grade VII, and in this way the higher grade students will earn more than the beginners. All contract work should be carefully inspected, and if the quality of workmanship does not come up to the standard it should not be paid for. The rejection of all poorly made articles causes students to do good, careful work and keeps them from turning in anything that is shoddy in respect to workmanship or materials.

Time work in certain cases is more advantageous than piece work. A carpentry job requiring very fine and careful work should be done on a time basis rather than on a piece basis. Time work in polishing has a tendency to increase the price of the articles, but the prospective buyer would rather pay a little more and get a well polished and nicely finished article than to have it only half done and that half not well done. Polishing can not be hurried, and if a student tries to do so, the probability is that the articles will have to be re-sand-papered with a resulting waste of labor and materials and an encroachment on the profits of the school.

Under-lac may be substituted for shellac if a cheap polish is desired. If this is rubbed in like shellac, it will give a fairly good, quick polish. Sandpapering in all polishing is a very important factor. After the piece has been thoroughly scraped by a cabinet scraper it should be sandpapered until it is perfectly smooth. The piece should shine before the filler is applied.

When time workers and piece workers labor side by side there is a strong tendency to waste time. All jobs which must of necessity be done by time work should be done during the regular shopwork periods, so as to leave the overtime periods for piece work exclusively.

Labor performed by the students away from the school, such as repairing houses, is more satisfactory to the school if done on time work, on account of the unlooked for things which almost always occur in the course of the work.

Entering trade school students who have had woodwork in the municipal shops or the manual training shops in the intermediate schools can usually be started on small pieces which find a ready sale. This will save the expense of lumber consumed in the so-called practice exercises. The joints and joining required in the making of picture frames, screens, taborets, and other simple pieces are the same as those made in the prescribed woodworking exercises. In such a procedure the students may not require certain kinds of joints, but they learn to make the necessary

joints so well that they will have no difficulty in constructing new kinds needed later in the manufacture of more complicated work. In this way practically all bench work in a trade school can be done without loss of material. Small articles can often be made from the scraps of larger jobs and if they take the place of exercises, their selling price is clear profit.

The overhead charge of 20 per cent which is usually added to large jobs is not enough for small pieces. The amount of materials consumed in making small pieces is not large, and frequently most of the work is done on the machines, thus making the value of the labor very low also, so that the selling price of the article often figures out ridiculously low. On such jobs overhead charges of more than 20 per cent should be made; sometimes 100 per cent is not too much. The selling price need not be below the local commercial prices, because very often the materials used by the schools are better than those used by factories. Prices should not be above local commercial prices, however, and the fact that many articles made by machinery in a factory must be made by hand in a school, should be taken into account when fixing prices. Panels and intricate mouldings come under this head. As a rule, however, factories do not care to bother with small jobs and they usually have a fixed minimum charge so that a trade school can do a small amount of this kind of work quite as cheaply as a factory. This consideration, then, needs to be taken into account only on large orders, or on an order for a piece practically the same as the factory-made article. Special designs made according to the buyer's specifications are usually expensive, no matter where they are made, and full value for the hand labor should be charged.

Work accomplished during the regular shopwork periods for which students receive no pay should be charged just as if it were paid labor. This is a legitimate profit for the school. If the paid labor and materials consumed in an article cost ₱4.80 and the selling price is fixed at ₱5, many buyers seem to be of the opinion that the school loses no money. In other words, they believe that when the school turns out a good piece of work, the selling price should be just high enough so that no money will be lost in the operation. The trade school, however, is a business proposition and if the right kind of articles is made, regular prices should be charged when the materials, labor, and finish are at least the equal of factory-made goods.

Great care must be exercised in the purchase of lumber and supplies, for every peso's worth of unserviceable material will

mean a deduction of one peso from the profits of the school. Lumber may be checked, it may contain much sap, or it may be full of black knots and knot holes, all of which cause unusually large waste and corresponding loss when such lumber is paid for as first class stuff. It frequently happens that the supplies ordered are not in stock, and substitutions are made without permission. Such undesirable and inferior articles, if substituted and sent without permission, should be returned. Worthless lumber and inferior tools and supplies are a dead loss to the school and must be avoided if satisfactory profits are to be made.

Office furniture, such as can be afforded by the municipalities, is very profitable work, especially when they can be made in large quantities. A job of twenty or twenty-five pieces does not need much more supervision than a job of one piece and certainly causes no more work for the drawing room. On an order for one piece, where a working drawing must be made that requires several hours of the drawing teacher's time or several periods of a students' drawing class, and where there is no possible chance of using the drawing again, the value of the drawing should be considered in fixing the selling price of the article. In machining lumber for a large order of similar pieces, quite a bit of time and materials is saved as compared with doing the same kind of work for a large number of small orders.

The work in the school should be systematized and students should not be permitted to go about their work in a haphazard way. The students should be called together upon starting a big order. The drawings should be fully explained and the best way of doing the work should be mapped out. When each student understands what he is to do and how it is to be done he can go about it in a business-like way and save time which he would otherwise waste later in waiting for instructions. All the wood should be planed and sawed at one time. Much time is saved by using the machinery whenever and for whatever possible, though no student should be permitted to stand around and wait a longer time for his turn to use the machinery than it would take him to do the work by hand. It is better to run the engine one hour every day than to run it three hours twice a week. This will prevent machine work from being held up for the regular running day. It pays to start the engine for even a half-hour's run, since more sawing and planing can be done by one person in a half-hour than the

whole student body can do by hand in an entire afternoon, and the only extra expense entailed is about two centavos for oil to heat up the engine and get it started.

A sandpaper machine can be made easily by putting a spare pulley on a countershaft and gluing sandpaper on it, or if there is an extra mandrel it can be set up and a large drum built on it. Roll sandpaper can be bought for a large wheel and fastened on with a cleat so that the paper can be changed readily without waiting for the glue to dry. A table over the wheel will aid in keeping straight the pieces to be sandpapered. A machine of this kind saves considerable sandpaper and many hours of time.

Carved work should be discouraged. Occasionally carved feet or legs may be put on tables, chairs, etc., but large orders should not be taken for carved articles. Carving takes too much time and does not furnish a good livelihood to a pupil after he leaves school. Large orders for very fancy furniture should be avoided. Desirable orders call for straight lines and easy curves. Furniture is, to a very large extent, the main output of trade schools, but it must be remembered that the students should not have the greater part of their time taken up in making fancy curves and carved work, because the majority of them are not going to make furniture when they leave school, but will probably get work as carpenters, housebuilders, bridge builders, or other positions of this nature.

GRADED ON CHORES.

The report blanks provided in Adair County, Missouri, have spaces on one side for the grading in school subjects by teachers. On the other side they have spaces devoted to "industrial work," where the parents grade their girls on sweeping, dusting, baking, sewing, washing dishes, and ironing. Boys are marked by their fathers on feeding stock, milking, currying horses, providing fuel, and feeding poultry. Blank spaces are left for other sorts of home work. In a note addressed to teachers and parents, Superintendent Sipple says: "Pupils get credit for the work they do at home. Home grades should be considered by the teacher in making the final grade and to determine promotion."