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## HOW SPECIALIZATION MAY BE CARRIED TOO FAR.

By GILBERT S. PEREZ.

A story is told of the origin of a great shoe factory which illustrates so well the value of specialization as an aid to efficiency in industrial work that it is quoted:

"Long years ago, in a little New England village, there lived a young and ambitious shoemaker. He was considered one of the best craftsmen in the township. He tanned his cowhides, fashioned his lasts, cut the soles and uppers himself, and finally sewed or nailed them together. As far as workmanship was concerned, the shoes were the best that could be made but he was not satisfied with the number of shoes that he could make in a month. He discovered, however, that if some one else could tan the hides for him he could make more shoes; so a tanner's shop was built across the way. Still the number of shoes made was very small, so he hired another man to sew the upper parts of the shoes together. By buying his lasts from the village carpenter and turner, he found that he could not only make more shoes than ever before, but he could also sell them at a much lower price. Business prospered and the shoemaker was turning out a dozen shoes in the time in which he formerly made one. He was soon on the road to wealth and independence. Shortly afterwards the tanner erected a large stone vat which was capable of tanning hundreds of hides a day; the man who sewed the uppers found that by using machinery he could double the capacity of his shop; and the village carpenter and turner discovered that by installing an electric planer and lathe he could turn out a larger number of lasts in a day than the shoemaker could use in a year. The old shoemaker refused to break away from his old hand methods and as his old methods were too slow to suit the other men concerned, an expert machinist set-up a machine that would sew the uppers and the soles together. This was the beginning of a great shoe factory that is now known all over the world. And what of the old shoemaker? He stuck to his hand methods and refused to specialize. He is still living and a visitor to the city which has grown up from that village, would find in an obscure alley an aged stoop-shouldered man bending over his bench sewing old soles to still much older uppers. As

he waxes his threads he dreams of the time when he was considered one of the best shoemakers in New England. The rusty weatherworn sign, 'Boots and Shoes Made to Order and Repaired,' is the last vestige of his former wealth and prosperity. The shoemaker, as a craftsman, has gone forever, left behind by an age of specialization and efficiency."

Is this story a proof that efficiency is the natural sequence of specialization? Does it emphasize the fact that with specialization comes an increase in income and a decrease in the price



Specialization of course but not of design. After finishing these three types of baskets pupils may make any basket in the course. Central School, Tagbilaran, Bohol.

of commodities? The great Krupp gun works in Essen, and the famous Ford automobile factory in Detroit are but a few of the wonderful examples of the multiplication of efficiency by means of intensive specialization. A visit to these factories would disclose the fact that each man is a specialist, each has his own work to perform, his own place in the cogwheels that are grinding out cannons and automobiles by the thousands.

Considering the purely commercial side, it is only by specialization that education can attain a high degree of economic efficiency. The old Jack-of-all-trades education that does not

prepare a boy for any special work after graduation is giving way to specialized courses which fit boys and girls for certain positions in life.

In this material age, however, when efficiency is given so much prominence in periodicals, magazines, and discussions, there is danger of going too far. While putting emphasis upon specialization care should be taken not to over-specialize. If schools are to be considered as mere factories for the production of articles, then specialization cannot be over-emphasized, but it should not be forgotten that the prime object or purpose of a school is to turn out men and women who are able to do and who will do, men who can think of what to do even if there is no one there to suggest. In industrial work it is natural to expect specialization. If a boy intends to be a carpenter, one would not expect him to spend a great part of his time stone-cutting. On the other hand, the fact that he specializes in woodwork is no reason why he should spend all of his time making a special size of a special kind of school desk, even if this does increase the money producing efficiency of the school 25 per cent. The purpose of the course is to award him a diploma as graduate woodworker and not as a graduate maker of standard desks No. 4a.

There is no need for over-specialization. It is reasonable to say that schools should specialize either in lace making or embroidery, but it is going too far to say that they should specialize in one kind of stitch. From a commercial point of view only, more would be accomplished by having one group of girls do embroidery and another calado, so that each group might become expert in its special work. In this way more and better articles would be made but by following this procedure the real training of the girls might be overlooked. Would that division of the work graduate a class of embroiderers or would it graduate a class of experts in calado and satin stitch? A girl finishing a three-years' course in household arts should be able to do any kind of embroidery, it does not matter what changes may come in style and stitches.

A reduction in the number of courses would be a step in the direction of specialization. The large variety in basketry courses is due rather to a difference in materials than to any great difference in technic. This is especially true in the case of baskets made of coiled fibers, coiled stems, and coiled strips. Stem basketry, polangui basketry, and bamboo basketry are practically the same, because a boy who can make one can just as easily make the other without further instruction.

In fact, the similarity between the courses is so great that one has to look at the label to determine to what group a basket belongs. It would be an aid to specialization to divide the basketry into the three general groups, rib basketry, coil basketry, and platted basketry, which cover all forms made in the schools. A pupil could then specialize in one of these courses and learn it so well that he could reproduce any form of basket placed before him, it matters not how often the styles change or the demand for one kind of basket diminishes. By consulting Technical Bulletin No. 26, s. 1916, it will be seen that there are enough baskets in each course to make a representative variety of baskets without over-specialization. It is not the policy of the Bureau, as some believe, to have a pupil spend all of his time on one kind of basket or on one kind of lace pattern. The very fact that the embroidery and lace samplers must be completed before a pupil is given work on a salable article shows the true purpose of the Bureau in its efforts toward specialization. The industrial work is a course just the same as arithmetic and grammar, and should be so considered. There are a number of teachers who specialize in arithmetic or in grammar, but no one ever heard of a teacher devoting all his time to fractions or of one who specialized in intransitive verbs.

In boys' industrial work, there should be specialization in courses but not specialization in subdivisions of these courses. In woodworking the work should be comprehensive enough to enable the boy to get such a broad training that he could undertake any ordinary woodwork job he could get. In gardening the schools should specialize in field crops, animal husbandry or market gardening only after having acquired such a general and broad foundation as would enable him to take these up successfully and to understand the coördination of these three most important branches of agriculture. In basketry the courses should be followed as outlined in technical bulletins, specialization coming only after complete mastery of the technique of the work.

In Tagbilaran the course method was successfully followed. The course consisted in the making of three kinds of bamboo baskets. The shapes of these baskets were typical and were chosen with the idea of familiarizing the pupil with different forms of this kind of basketry. All materials for these baskets were prepared, inspected and graded before the work on the baskets was begun. This tended to make all baskets uniform in size and in shape. After successfully completing one of each of these baskets the pupil specialized on the shape that appealed

to him the most. This was specialization without losing sight of the pedagogical side of the work.

In girls' work the aim should be to train the girls to be expert lace makers or embroiderers. They should be so thoroughly trained that their three years' work would fit them, not only to earn pin money but to pay a great portion of their own expenses. No one ever thinks of changing the purpose of the plain sewing course by specializing in camisas. The course is so planned that the girl can make any garment that is needed by the family. The courses in needlework are so planned that the girl can fill any order that comes in. Over-specialization or the making of only one design during the school year will destroy the purpose and the efficiency of the course. Sane specialization increases a teacher's efficiency, lessens the cost of material and equipment, increases the output, facilitates marketing, and doubles and trebles the sales, without interfering with the purely educational side of the work.

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"Let us examine any well-managed and successful business firm or factory. Every employee does the work he knows and does best, the skilled workman, the accountant, the manager, and the secretary, each in his place. No one would dream of making the accountant change places with a commercial traveler or a mechanic."

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"In a well-constituted society, each organ has its definite function, that is to say, administration is carried on by those who have learned how to administer, legislation and the amendment of laws by those who have learned how to legislate, justice by those who have studied jurisprudence; and the functions of a country postman are not given to a paralytic. Society should model itself on nature, whose plan is specialization. 'For,' as Aristotle says, 'she is not niggardly, like the Delphian smiths whose knives have to serve for many purposes, she makes each thing for a single purpose and the best instrument is that which serves one and not many uses.' Elsewhere he says, 'At Carthage it is thought an honor to hold many offices, but a man only does one thing well. The legislator should see to this, and prevent the same man from being set to make shoes and play the flute.'" (Emile Faguet, "The Cult of Incompetence.")