

Humanizing Facts

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"FACTS ARE FAKES," once said Joseph Lee, a citizen-philosopher of Boston. What he meant, I suppose, was that facts by themselves have no use, and that without their relationships and the inductions which come out of their intelligent use, they can have no vitality.

It is the fashion today, however, to talk of facts almost as if they had a sacred potency. "Get all the facts" is often advised, or, "The counselor must know all there is to know about the counselee [a large order!] if he expects to do efficient work." The collection of facts is important, but only as such collection relates to specific purposes.

I once had a letter from the president of a junior college, who said that the next time he hired a vocational counselor he wanted one who would not spend all his time over his records. A fact basis for action is important enough, but certainly there are many instances in life in which insight, or even inspiration, is much more important than are facts. Indeed, we often are forced to make decisions contrary to the row of facts which are obvious to the present view; sometimes we find we must make our own facts through our own effort, and make them on quite a different pattern from that which meets the eye.

Reasoning may be based largely on facts, but, occupationally speaking, the human element becomes a vital and necessary part of the adjustment picture. A dean of the vocational guidance movement concludes that in learning about occupations judgment is as necessary as facts; and that imagination and inspiration are requisite to successful vocational living.

Certain it is, also, that life and education are far more typified by the unfoldment and growth of a plant or flower than they are by the accretion of a snowball or the collection of a basketful of discrete objects like nuts or coins. Facts give us a basis for reasoning, yes; but it is important to remember that they do not and cannot give us the reasoning itself. They have no more power, through their own accumulation, of presenting the right deductions and inductions to the mind than a concourse of atoms in fortuitous arrangement would have to give us a typewriter or a tree.

Good teaching should give incentive to go after necessary facts, and this is a slightly better definition of teaching than would be the process of presenting facts to the student. The story of the boy who was too busy to go to school is an illustration in point. His busy life—a full, rich life in his juvenile environment—gave him what he needed for his growth and education and drove him to the collection of needful and pertinent facts, which he and his parents knew perfectly well he would not obtain if he went to school.

Schools, unfortunately, are too much concerned with developing unrelated skills and "imparting" unrelated facts.

Much geography teaching is an unmitigated bore for intelligent children, whose minds quite naturally run ahead of the page after page of factual information.

Classes in occupations, likewise, frequently devote themselves to the imparting of facts. The power of the human mind to forget is so great that teachers who take the easy course of drilling on facts, and examinations on the same, ought, in mercy to children, to revise their methods.

HANG FACTS ON PROBLEMS

The obvious alternative, both in geography and occupations, is to teach problems and to hang the facts on these problems. In this age of testing, however, we are still too prone to take the easiest course. Examinations which test the understanding of problems are not easy to construct; those concerned with facts are relatively easy. Consequently, a few attempts have been made already, in a field so young as occupational information, to work out a measurement of gains in the learning of occupational facts. Such a test constructed a few years ago contained one hundred points, most of them being based on factual information. Some of the results obtained from using this test were reported by Mildred E. Lincoln in this magazine for December, 1933.¹ Dr. Lincoln's results showed a definite gain in test scores for classes which had studied occupational facts over those which had not studied them. This in itself, of course, was not surprising. But she proved, and will give more conclusive proofs in her forthcoming book, *Teaching About Vocational Life* (International Textbook Company), that regular classes in occupations do accomplish

better results in the learning of knowledge than do more casual methods.

Interestingly enough, the results of this test have been questioned on the basis of the small amount of gain. Statistically, the results are significant, but from the financial standpoint one critic raised the question as to whether it is worth-while to teach occupational information at public expense in regular classes² when the "gain was so little as something like six points out of a hundred."

TREATMENT OF RESULTS

Test results often have been treated by pretended statisticians as if gains could be measured in percentages. No such treatment, however, is justified, nor is the criticism of small gains justified, without a survey of the questions relating to the zero point of occupational information and the hundred-per-cent point.

Take the case of the high jump. Just what is zero ability in jumping? Is it being unable to get out of bed at all, or is it ability to stand up before the bar but inability to leave the ground? Or could three feet be taken as the zero point? Likewise, if we try to find the hundred-per-cent point in high jumping, we should have a bit of difficulty, not only in securing the necessary ladders, but in sufficiency of imagination as well. The point is that, in the case both of occupational tests and high jumping, the zero point and the hundred-per-cent point are wholly arbitrary and without any logical existence. A coach might say to his jumpers, "Six feet will be our zero point for this season." Under this arrangement a man who gains from six feet four to six feet six would have a gain of thirty-three and one-third per cent. But the man who

¹Mildred E. Lincoln. "Measuring Outcomes of the Course in Occupations." OCCUPATIONS, XII, 4, Pp. 36-39.

²This argument, of course, puts all other course subjects "on the spot" as well as occupations.

made a gain of from six feet six to six feet seven, though his percentage gain is lower, might still be victorious in the contest.

In the case of the study of occupations, the statistical procedures used by Dr. Lincoln in the test under question make a present to the student, even if he answers by chance, of a total of twenty-five points (there was a four-fold choice), and probably even the backward would do well enough, without ever studying occupational information at all, to pile up a record of fifty. Moreover, of course, there is no significance whatever in the fact that the test itself contains just one hundred points. It might have had fifty-one or five thousand, with no great logical difference.

We little estimate, also, the consolidation of abilities and knowledges which comes from practice, even on a low level. The child who has studied occupational information for a year, even with "moderate gain," if there were any measure to justify such a designation, might still have consolidated his knowledge in a very important way, as the high jumper who "gains nothing" might consolidate his form in such a way as to lead him to definite gains later.

DETERMINE NEED

Besides this consolidation of facts and points of view already known, and besides the consideration of problems which before may never have come into view and which are not tested in the examination, there is the important consideration that even the learning of a few new pertinent facts may make important differences in the future of the child. I sometimes think that if all children in high school could learn the fact that evening schools and correspondence courses are not ordinarily adapted to persons un-

der twenty-one years of age, great values would come into the educational landscape. Similarly, if a few deluded boys could learn the difference between the work of the electrician and the electrical engineer, or between that of the accountant and the bookkeeper, much grief might be saved in the direction of miseducation and subsequent failure on the part of many pupils.

The class in occupations, therefore, might well cease to worry very much about facts as facts and turn, rather, to the exploration of problems within the life of the individual and the revealing to him of the need for discovery of information for solving such problems. Then, with the need in view, some help might be given in the technique of how to discover facts, with the confidence that practice of this sort would encourage the discovery of pertinent facts as needed, rather than the collection of a mass of facts which may or may not at some future time be valuable.

A TRIAL TEST

As a means of illustrating what can be done in the way of gain by disregarding some of the statistical verities, the writer constructed a short test which was administered to two classes in the Graduate School of Education at Harvard University in November, 1935. One of these classes, consisting of fourteen students, was used as the control group and no teaching was offered this class, the test itself being given at each of two occasions, a week apart. The other class, of twelve students, likewise had the test at each of two meetings, a week apart, but between the two tests there were two short periods of directed learning, totaling fifteen minutes of instruction. The occupational information test was as follows:

OCCUPATIONAL INFORMATION TEST

Directions: Below are the names of 25 occupations from the census classifications. After each occupation designate, to the best of your ability, the "industry, business, or place in which the person works." If you do not know, guess.

- | | |
|-------------------|---------------------|
| 1. Amopule filler | 14. Muffle man |
| 2. Blunger | 15. Robber |
| 3. Dash maker | 16. Rough-stuff man |
| 4. Dough maker | 17. Seater |
| 5. Fillerman | 18. Servitor |
| 6. Flosser | 19. Stuller |
| 7. Gum grinder | 20. Target man |
| 8. Jet man | 21. Tear-down-man |
| 9. Jibman | 22. Tending boy |
| 10. Jim-around | 23. Tin-foiler |
| 11. Knifer-up | 24. Tosser |
| 12. Latcher | 25. Yeoman |
| 13. Magnetizer | |

The results of this test, with averages used instead of means, because of the obvious difficulty in selecting the middle points in a number of small scores, are set forth in the table below.

It will be seen from these results that the taught group gained 21.7 points out of a possible 24.8 points. Again disregarding the amenities of statistics, we might declare this to be 87½ per cent of *complete* learning. Or again, we might assert that if 21 points can be gained with only fifteen minutes' teach-

ing, 42 points could have been gained with thirty minutes' teaching. This obviously gets us outside the test, but the whole experiment gives us all the percentage gain which any enthusiast might desire—thirteen hundred seventeen per cent!

WEIGH DECISIONS

In the test used in Dr. Lincoln's experiment, effort was made to include only important facts about common occupations; facts which normal, intelligent adults usually know as a matter of course. Moreover, her test facts have never been specifically related to an actual teaching program, so that, unlike most testing of instruction, no necessary connection has been shown between class work and test results.

But, again, judgment is better than facts, and our teaching should be directed toward the weighing of decisions rather than the weighing of facts. Imagination and inspiration are sadly needed today in vocational life. Let us have the facts, then, but let us not believe all of them, nor encourage children to think that they have any more importance than their service to mankind in solving occupational problems.

TABLE I

	UNINSTRUCTED CONTROL GROUP			INSTRUCTED GROUP		
	<i>First Test</i>	<i>Second Test</i>	<i>Gain</i>	<i>First Test</i>	<i>Second Test</i>	<i>Gain</i>
Average Score	1.4±.8	1.6±.5	—	1.8±.9	23.7±1.2	—
Average Gain2			21.9
Percentage Gain			14			1317
Net Gain of Instructed Group			—			21.7 and 1303%