

## THE LIMITATIONS OF SCIENTIFIC METHOD IN EDUCATIONAL GUIDANCE \*

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In discussing the topic assigned to me I am conscious of the complexities and the difficulties standing in the way of any program designed to assure to each individual the type and kind of educational training for which he is best fitted. Such a program must be developed, however, if we are to make any real progress in increasing the number of successes entering any particular sort of training. Such a program is the very essence of a well considered plan of educational guidance.

Perhaps none would deny the desirability of launching an educational guidance program. But we would not agree so readily concerning the ways and means of its development and execution. Here we would be concerned with a careful evaluation of various proposed methods of educational guidance and I propose to proceed with a discussion of this phase of the guidance problem.

It will surprise few of you to know that one of the proposed methods of educational guidance is now classified by all reputable psychologists as a pseudo-science. I refer to the pseudo-science of character analysis. I mention this because of the large number of students who turn to the character analyst for help in deciding upon their life work and the training necessary for it. The character analyst, preying

upon the ignorant and credulous, proceeds to read character by means of the bumps on the head or the so-called signs of character in the ears, color of the hair and skin, shape of the face, and so on. I can assure you that this practice is not confined to the dark ages but actually continues in the Northwest today in a rather flourishing manner. I understand that one or more well known educational institutions in the Northwest actually employ such methods in advising with their present or prospective students. Time does not permit more than a mere mention of this matter, but I consider it sufficiently important to condemn it dogmatically and urge you to do all in your power to prevent the spread of such an inaccurate and unscientific method of educational guidance.

In passing, I wish to mention and to discount methods of guidance that place emphasis upon the reading of character by means of photographs, the judging of educational needs on the basis of a short personal interview by one who has not known the person interviewed for a considerable period of time, the judging of educational fitness on the basis of letters of recommendation, or the selecting of an educational program on the basis of self-analysis and self-rating schemes advertised for sale in our popular magazines. The existence of these methods and their widespread use in spite of their unreliability only points to the urgent need of more scientific methods of educational guidance than we have had in the past. I refer those of you who may feel

\* This paper was presented before the first Educational Guidance Conference at the University of Minnesota in May, 1924. This conference was a joint meeting of high school and university teachers and administrators to discuss their common problem of educational guidance.

that my treatment of these methods is too severe and too dogmatic to a recent book by Hollingworth, entitled *Judging Human Character*.

My attack on unscientific methods of educational guidance may lead some of you to believe that I am about to propose a scientific scheme of educational guidance. On the contrary, that could not be my purpose for I am not familiar with any scheme of educational guidance on the lower or higher educational levels that may be called scientific. Beginnings are being made here and there, however, that should lead to the gradual development of more reliable methods of educational guidance. It will come, in my opinion, only in case we adopt the spirit and methods of scientific research in the attempted solution of many specific educational guidance problems.

Confining ourselves to the question of the extent to which we are now prepared to inaugurate better educational guidance in colleges and universities, I wish to review briefly some of the facts, and methods of obtaining additional facts, that will make this possible.

*Question 1.* Will knowledge of a student's high school marks enable us to predict whether he will be successful in college, and hence enable us to advise him to enter college or to seek some other form of training or employment? We have evidence, and there is every reason to believe, that a student's scholarship in high school is a real indication of his ability to do college work. The distressing thing is our inability at the present time to secure an unambiguous record of achievement in high school. Thurstone's extensive investigation of the relation between high school marks and marks in 43 schools of engineering revealed such a low relationship as to be almost non-significant for guidance purposes; simi-

lar results have been secured in other investigations. However, these disappointing figures do not mean that an unambiguous record of high school achievement is of no value; but they do mean that it is dangerous to accept at face value the usual high school scholarship record as a reliable measure of the student's actual performance in high school. This is due to the presence of many complicating factors. The most important of these seems to be the varying standards of grading in different high schools. These varying standards depend upon the quality of the students, the content of the courses, and the severity or leniency of instructional staffs in marking. A 95 per cent student from one high school may be the equivalent of only an 80 or 85 per cent student from another high school. We urgently need a universal and standardized method of evaluating the graduation product of high schools wherever located. Progress in this direction, necessarily slow, is being made by the introduction and use of standardized objective educational measuring scales for each of the high school subjects. Every school that makes progress in the utilization of such testing methods will be assisting in the development of the educational guidance program at this point.

In the absence of such universal standards let me call your attention to the fact that you will be aiding the cause of educational guidance if you will average the high school marks for each of your seniors and then arrange your graduating class in a general scholarship rank order from the best to the poorest. Arrangements have just been completed by the University for requesting this information concerning each senior who comes to us from the various high schools over the state. We hope that this information will aid

us in dealing more intelligently and more fairly with those high school graduates entrusted to our care.

Enough information is at hand from research studies here and at other universities to warrant the statement that a high school graduate who stands in the lowest one-fourth of his class is a poor college risk. It seems only fair to such a student to warn him, before he decides to matriculate at a university, that his chances of success are extremely small and that he might make a wiser choice in seeking some other form of training or employment.

*Question 2.* Will knowledge of a student's intelligence test results aid us in predicting whether or not he will be successful in college? We have considerable evidence that the answer to this question is yes. In the very nature of things we shall never have intelligence tests that will predict unerringly, but we do not need such a perfect instrument to gain more knowledge than we usually possess concerning a student's probable success in college. I see no reason for believing that the appearance of intelligence tests need give rise to extravagant hopes or extravagant fears in the field of educational guidance. They merely furnish useful but not conclusive evidence. The relation between test scores and college achievement is sufficiently close to warrant conservative use, in connection with all the other facts available, in giving better educational guidance advice to individual students. Just as we at the University are finding the results from the intelligence tests of value in our dealings with students, so you in the high schools are undoubtedly finding them worth while. Here, again, permit me to point out the possibility of encouraging your graduates who make low scores in the intelligence tests and who are also low in scholarship to

think ten times before they decide to go on to college. Permit me also to emphasize the need of giving every possible encouragement to those who make high intelligence test scores and high scholarship averages to continue their academic or professional education. Recent state-wide surveys in Indiana and Massachusetts indicate that a startling number of the ablest high school graduates do not continue their schooling. Many of these cannot continue because of financial reasons, and it would seem highly desirable to organize the financial resources of the community to assist such students in obtaining a college education. *If we could reduce the enrollment of those who can afford a college education but cannot profit by it, and at the same time increase the enrollment of those who can greatly profit from a college education but cannot afford it, we should have made a substantial contribution to a more satisfactory scheme of educational guidance.*

So far I have been discussing methods of getting a line on the general academic ability of high school graduates and college freshmen. We urgently need scientific methods of measuring attitudes, motives, and interests, for these are equally important if not more important in making for educational adjustment or maladjustment. We do not have, at the present time, reliable methods of measuring such factors, but it is reassuring to know that serious experimental work along this line is being done. Undoubtedly progress will be made and the definite limitations of our present scientific educational guidance methods be correspondingly overcome. We also need to know and to be able to measure whatever special abilities are involved in successfully completing various courses of study. Research in this field has scarcely been begun, but

the importance of such research will undoubtedly lead to serious studies concerning such special abilities. Permit me to close with a plea for the close coöperation of all concerned in carrying on and vigorously developing sound methods of research in the field of edu-

cational guidance. Being handicapped by no delusions of grandeur concerning our present methods, we should go ahead with every prospect of gradually improving our methods, to the end that a more scientific scheme of educational guidance be made possible.

## IS THE HIGH SCHOOL DOING ITS JOB? \*

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Ten or fifteen years ago educators were quarreling over the content of the high school curriculum. Then the puzzling question was one of the retention versus the elimination of Latin, algebra, and other subjects. That question has been settled by the differentiated high school course of study.

To-day the puzzling question is one of determining the job which the high school should do. Certainly it is expected to do more than prepare young people for college. It has as one of its functions the training in citizenship. As another of its functions it is expected to train young people to make a living. Then, too, it has a cultural function.

The writer is of the opinion that if the high school does no more than satisfy the suggested requirements which are set forth in the preceding paragraph, it is failing in its mission and *is a wasteful institution*. The writer has talked with scores of young people concerning the reasons for their having come to a teacher-training in-

stitution. The conversations aroused my curiosity on one fundamental aspect of high school education — that of *Guidance*. I commenced to wonder why it was that young people came to normal school. I drafted a questionnaire and submitted it to almost 1200 students in five Pennsylvania Normal Schools. I was desirous of getting some facts on several important questions — principal among which were the reasons for coming to normal school and the reasons for coming to the particular normal school which they were attending.

In gathering some general information about the students I learned that 40 per cent of them *had never had a conference* with any member of their high school faculties regarding their work after they left high school. Their high schools may have functioned admirably in citizenship training, in education for leisure, or in education for making a livelihood, but I do know that with at least 40 per cent of them no one asked the question, "What will you do after graduation from high school?" By no means does it follow that the conferences which were had with the 60 per cent of my subjects were helpful to them in choosing teaching as a life work. They may have been, and again they may not have been.

\* These conclusions are a few of the many which might be drawn from a survey made recently by the writer and published under the title of "A Study in Guidance among Normal School Students." Single copies can be secured for twenty-five cents by addressing John A. Kinneman, State Normal School, West Chester, Pa.