

PRESENT TENDENCIES IN EDUCATIONAL PSYCHOLOGY

ALFRED L. HALL-QUEST

University of Virginia

In the minds of many the claim that education as a college subject is to be termed a science is at present insufficiently supported. Many honestly believe that education in the very nature of things cannot become a science. Exact measurements of mental processes are quite impossible, and without such exactness "science" is a misnomer. If, however, one defines science as truth inductively investigated and carefully organized for the purpose of discovering and stating fundamental laws, then education has the right to this title, for this is exactly what is being attempted, especially in that branch of education called educational psychology. Once a smattering of *a priori*, philosophical theory and emotional exhortations based on traditional viewpoints—themselves the results of points of view held by prominent thinkers—education today is struggling away from untested authority into the laboratory where testing, investigation, experimentation are the main if not the only grounds adequate for educational theory and practice. Granting that at present much of this laboratory work is inexact and subject to constant revision, and admitting also that mental phenomena elude absolutely exact measurements, credit should be given for the conscientious attempts made to ascertain as accurately as present apparatus permits what are the laws of learning and how the educative process can best be realized in a reconstructed system of education. The modern point of view in education seeks to be scientific, *i. e.*, open-minded and receptive to demonstration and observation of enumerable cases or subjects. If the results are unsatisfactory this is doubtless inevitable even in those sciences called exact. Constant revision is the key-note of true science.

What is true of education in general has been true also of its closest ally, namely psychology. In many quarters psychology remains in the philosophical group. Teachers of philosophy are loath to agree to a breaking of partnership with this subject of psychology dear to Plato. On the other hand, psychologists who have succeeded in starting business for themselves, as it were, are equally unwilling to grant that *educational psychology* deserves independence. To classify psychology into eight or nine subgroups as is now customary seems after all to be purely arbitrary and convenient only for administrative purposes. Essentially there is only a difference of the field of application, and references to these various fields can be easily and adequately made in general psychology. To call educational psychology a distinct discipline or science is therefore looked upon by many as arrogant presumption.

But the fact that education forms one of the many fields of specific application of psychological truth and one of the most significant in the life of individuals and nations is reason enough to emphasize educational psychology as worthy of a distinct title. For this particular phase of the "science of mind" or of "behavior" deals with a select group of processes, and specialization is necessary, for the sake of economy of time at least, to investigate and organize the data here available. It is fundamentally important that experiments be made throughout the entire field of education. The problems of the school room and of the learner are peculiar to these phases of society. Experimental pedagogy is just as important and just as possible as experimental farming. Agriculture is distinct from biology and botany and chemistry but as a science it depends on data from all of them. Educational psychology is distinct from general psychology, biology, history and philosophy but it uses data from all of these departments of learning and in addition seeks to demonstrate in mathematical terms or graphs the results of investigations carried on in the school or under conditions similar to the school. The task is indeed herculean. Men like Meumann, Thorndike, Bagley and Whipple loom large in its evolvment.

But educational psychology, because a young science, is still insufficiently organized. There does not seem to be a general agreement as to its contents as over against the delimitations of

psychology in general. College and university courses in the subject are still largely the result of personal preferences on the part of the teacher in charge. Terminology is still confused. In order to ascertain the present tendencies as accurately as possible a questionnaire was sent to all of the teachers of educational psychology included in the membership of the Society of College Teachers of Education. The questions in the main asked for information on the following points:

1. Name of course, with number of semesters offered, principle method of teaching it, prerequisites, seminars offered, enrollment and name of authors and texts used in the respective courses.
2. Distinctly pedagogical laboratory equipment available.
3. List of sub-topics stressed in the courses taught.
4. Other subjects taught by teachers of educational psychology.
5. Conceptions of standard courses in this field and suggested minimum requirements, including specific prerequisites, for entrance upon courses in educational psychology.
6. Problems investigated in the seminar courses.

The questionnaires were filled out by fifty-three professors. Replies stating inability to supply the information requested or that no special courses in this subjects were offered came from fourteen. In all sixty-seven replies were received. The author takes this opportunity of acknowledging the courtesies shown him in this preliminary survey. Many of the correspondents evinced keen interest in the attempt to ascertain what is now being done in this subject and many expressed the hope that some definite effort might be realized for systematizing and standardizing educational psychology.

The foregoing subjects in some cases, as "Social and Moral Education," are not strictly psychological but they were so reported.

At Teachers College, Columbia University, courses in educational psychology include methods of teaching in special classes, supervision of special classes, observation, experiment and teaching in connection with special classes, psychology of childhood, psychology and treatment of exceptional children, applications of experimental and physiological psychology to education, educational psychology, psychology of the elementary

A. TENDENCIES AMONG COLLEGE AND UNIVERSITIES

TABLE I.

Names of Courses in Educational Psychology

General Educational Psychology.....	45	Principles of Method for High School Teaching.....	2
Advanced Educational Psychology...	5	Criticism and Supervision of Teaching	1
Genetic Psychology.....	16	Literature of Educational Method....	1
Mental Tests.....	17	Modern Methods in Elementary Schools	1
Child Psychology.....	4	Psychology of Learning.....	1
The Learning Process.....	3	Method.....	1
Deficient Children.....	3	Psychology of Elementary Subjects..	2
Principles of Teaching.....	1	Psychology of Elementary Subjects..	1
Psychology of Adolescence.....	1	Principles of Education.....	3
Logic of Education.....	1	Practice Teaching.....	2
Social and Moral Education.....	1	Onthogenics.....	1
Elementary Educational Psychology..	1	Eugenics and Euthenics.....	1
Mental Processes.....	1	Retardation and Elimination.....	1
Individual Psychology.....	1	Lecture Course on Memory Process..	1
Psychology for Normal Teachers....	1	Lecture Course on Reasoning Process	1
Laboratory Courses.....	6	Problems of College and University..	1
Statistical Methods.....	2	Various Seminar Courses.....	8
Experimental Education.....	7		
Principles of Method for Elementary Teaching.....	1		

subjects, psychology of the secondary school subjects, application of analytic and genetic psychology to education, application of psychological and statistical methods to education, clinical psychology and courses in statistical methods.

The foregoing lists will be better understood after noting the sub-topics stressed in some of the courses.

TABLE II.

SUB-TOPICS IN EDUCATIONAL PSYCHOLOGY

The Learning Process.....	11	Mental Tests.....	4
Memory.....	11	Individual Differences.....	6
Fatigue.....	7	Perception.....	3
Instinct.....	8	Transfer of Training.....	3
Attention.....	5	Reason.....	5
Habit.....	8	The Original Nature.....	4
Imagination.....	6	Correlation.....	3
Association.....	5	Psychology of special subjects.....	3

The following sub-topics are mentioned only once: Mental and Physical Hygiene, Feeling, Acquisition of Musical Skill, Physical Development, Work, Dependence of Mind on Body, Child Development, Play, Retardation, Conception, Volition, Suggestion. Sub-topics in general psychology as emphasized in connection with education and mentioned once by the respective correspondents are Infancy, Periods from the Standpoint of Neural Development, Play, Instincts, Animal Psychology, Child

up to School Age, Development from Infancy through Adolescence, Growth of Mental Power, Heredity, Individual Differences, The Learning Process, Abnormalities, Fatigue, Physical and Mental Development, The Abnormal Boy, Growth and Function, Development of Intellect, Development of Instincts, Application of Tests, Organic Evolution and Development, Mental Evolution (animal and human), Sensation, Expression, Control, Social Psychology, Sensory Discrimination, Memory and Memory Images, Evidence of Reasoning, Evidence of Consciousness, Child Study, Development of Special Functions, Social and Moral Development.

The main courses offered under the general title of educational psychology stress the following sub-topics. *Experimental Pedagogy*—psychology of testing, technique of Binet tests, new tests, elementary school subjects, educational measurements, study of inductive literature of psychological processes involved, testing results. *Advanced Educational Psychology*—individual differences, mental inheritance and correlation, original nature of man, psychology of learning, social psychology. *Experiments in Educational Psychology*—Starch's Manual, acquisition of habits, memorization, association, intellectual tests, economics of learning, types of learning. *Mental Tests*—Retardation, Binet Tests, mental and physical tests, defective and exceptional children, Whipple's Manual, perception and reasoning. *Logic of Education*—Psychology of attention, interest, thinking, age differences and development, individual differences. *Social and Moral Education*—Psychology of character, age differences and development, application of pedagogical method.

Seminar Course in Educational Psychology are being devoted to research in the following fields: attention, individual differences, Binet tests each year in the elementary school, mental levels, practice error in short hand, principles of marking pupils, scales, the learning process, moral deficiency, school processes, fatigue, mental deficiency, blood pressure, locomotive guidance, adolescent psychology, border cases, psychology of secondary subjects, educational measurements, mental tests, effect of the Curtis practice series in arithmetic, coefficients of correlation, attention in advertisements, operation of secondary laws of association, how students study, endowments, pediatrics, applicability of standard tests, practice effect of learning, eye movements,

standardization of school and mental tests, criticism of mental and physical development, age standards in mental tests, study of "opposite" tests, completion tests, age standards in writing, retardation and elimination.

The foregoing survey, while lacking in completeness, embraces forty of the institutions offering courses in educational psychology in this country. One observes considerable confusion in terminology, courses doubtless similar in content bearing titles quite dissimilar. The subtopics are distributed according to the individual instructors' conception of the course. There seems to be lacking a universal agreement on the contents of educational psychology in general or any of its large branches in particular. The field is defined arbitrarily and titles are used as labels for "all-spice" courses. But from this mass of topics it may be worth while to state the following

Summary—Educational psychology as now taught in the colleges and universities of this country embraces chapters on the learning process with special emphasis on memory processes included under various terms and involving association, perception, imaging, attention and to a less degree chapters on the higher thought processes of thinking and reasoning. Considerable time is devoted to the study of mental development by stages or by age. The original nature of the individual including endowments, instincts, capacities with habit formation is given considerable attention, and is adding to the significance of the doctrine of individual differences. This study of normal endowment is supplemented by courses on defective and exceptional children with the intimately related problem of retardation. No small amount of time and effort is devoted to the psychology of school subjects and the application of its principles in supervised methods of teaching. The numerous courses on statistics evince a growing tendency to reach as high degree of accuracy in measuring and stating results as may be possible in this type of scientific work. One senses throughout the confusion of titles and terminology a wholesome movement toward a well defined field of investigation and the possibility of eventually standardizing the general conception of educational psychology.

B. ADMINISTRATION OF COURSES IN EDUCATIONAL PSYCHOLOGY

TABLE III.

Others Subjects taught by instructors in Educational Psychology

Philosophy.....	10	Comparative Psychology.....	1
Logic.....	1	Hygiene of Instruction.....	1
Ethics.....	4	School Administration.....	2
History of Education.....	9	School Hygiene.....	3
Psychology.....	9	Education.....	4
Secondary Education.....	2	Applied Psychology.....	1
Education in U. S.....	1	School Management.....	1
Principles of Education.....	3	Philosophy of Education.....	2
Pedagogy of High School Subjects.....	2	Adolescent Psychology.....	1
Genetic Psychology.....	1	Educational Theory.....	2
Experimental Pedagogy.....	1	Primary Education.....	1
General Methods.....	3	Psychotherapy.....	1
Experimental Psychology.....	4	Educational Sociology.....	1

In seventeen institutions the "professor of education" is a distinct chair, in twenty-eight the chair is not distinct.

It should be noted that in the table the subjects taught in addition to educational psychology are very closely related to this field. Philosophy still claims education as its own in fifteen of the institutions replying. The groupings in the table are, it would seem, quite logical and the additional subjects might well serve as fields of applied educational psychology in which the principles of the main subject may receive concrete and vital illustration and realization in reformed methods.

Prerequisites.—There is a strong tendency to make general psychology a prerequisite to courses in educational psychology, thirty institutions still making this requirement. In this connection the comments of three or four professors in educational psychology are significant. Professor Colvin writes:

"A course in general psychology is desirable though not absolutely necessary. Prerequisites in education are not as a rule necessary though local conditions may make them desirable."

Other comments are more strongly opposed to prerequisites in general psychology as now taught. Professor Kohl says:

"General psychology should be a prerequisite but I am not so certain that it counts very much as usually given with the emphasis so much on sensation and the nervous system. I am feeling more and more that a vital course in biology would be a greater help."

Professor V. A. C. Henmon writes:

"I have a feeling that there would be a gain if those who intend to take educational psychology should take general psychology in the department of educational psychology. A better articulation of the work would result."

Professor Chase of the University of North Carolina writes:

"It is my good fortune to teach elementary psychology as well as the educational psychology. I do not believe, however, that the two courses can be fused and was very much surprised to see in some of the replies published this month (March) in the *Psychological Bulletin* that a number of teachers were in favor of such a union. Pure psychology and educational psychology, to my mind, require different methods of treatment, different subject matter, different points of view. The approach must be different, as must be the approach to pure and applied science anywhere. I have wrestled with the question whether pure psychology should be required as a prerequisite for educational psychology and have finally come to the conclusion that it should not."

The suggestion that courses in biology be substituted for prerequisites in pure psychology deserves careful consideration. The chief advantage in pursuing the latter lies doubtless in the acquaintance offered the student with terminology and general contents of psychology. The same advantage, however, results from a well organized course in educational psychology if care is taken to explain terms clearly and without too much reference to the many theories concerning psychological terms. Confusion results frequently when students of pure psychology begin the study of education. The point of view is wholly different and it becomes necessary in all too many cases for the student to unlearn what he laboriously tried to glean from the prerequisite course. With the prevailing trend of functionalism or behaviorism in education prerequisites in biology are more essential than general psychology, which all too often is limited to the philosophical or introspective method.

There is a wide range of practice relative to class or semester requirements, but the replies are based on local meanings of administrative terms in many instances, making it difficult to draw conclusions. There seems to be, however, a tendency to require a whole year of general psychology as an introduction to educational psychology. In six institutions experimental psychology is required instead of general psychology. Within the field of educational psychology practically every institution giving information on this point requires general educational psychology as a prerequisite to other courses in this broad field. There does not seem to be a very general requirement that students of methods of teaching have had courses in educational psychology. It is difficult to understand how any teacher can adequately employ correct methods of teaching without knowing something of the underlying principles of the method. Methods

tend to degenerate into mechanical devices and monotonous routine unless consciously evolved from a knowledge of the learning process.

Last year there were offered sixty-one one semester courses, forty-one two semester, two three semester, three one or two semester, one one and a half semester and two six semester courses in the several courses listed under Educational Psychology. Twenty-two hundred and fifty-nine students were enrolled in undergraduate courses and three hundred fifty-six in the graduate department.

Summary.—The administrative phases referred to indicate that at present General Psychology is regarded as the essential prerequisite to courses in educational psychology. Here and there are suggestions that biology take the place of the prevailing prerequisite. Professors of educational psychology teach closely related subjects, but several are still dividing their time with philosophy. One semester courses prevail. The enrollment in undergraduate and graduate courses last year indicates a most encouraging interest in this new science.

C. METHODS OF TEACHING

The following table is not intended to be exhaustive. It simply lists the various texts that are used either exclusively or for reference purposes. Other books are referred to also but these were mentioned as the more important.

TABLE IV. TEXTS USED IN EDUCATIONAL PSYCHOLOGY

<i>Author</i>	<i>Text</i>	<i>Number Using</i>
Colvin.....	The Learning Process.....	11
Thorndike.....	Educational Psychology (Brief Course).....	8
	Educational Psychology, Vol. I.....	3
	Educational Psychology, Three Volumes.....	3
	Principles of Education.....	1
	Mental Measurements.....	9
Pyle.....	Outlines of Educational Psychology.....	6
Bolton.....	Principles of Education.....	5
Starch.....	Experiments in Educational Psychology.....	4
Parker.....	Methods of Teaching in High Schools.....	4
Kirkpatrick.....	Fundamentals of Child Study.....	4
	Genetic Psychology.....	3
Rusk.....	Introduction to Experimental Education.....	3
Bagley.....	The Educative Process.....	3
Whipple.....	Mental and Physical Tests.....	3
Meumann.....	Psychology of Learning.....	2
Judd.....	Genetic Psychology.....	2
Pillsbury.....	Essentials.....	2
Angell.....	Psychology.....	2
James.....	Talks to Teachers.....	2
Horne.....	Psychology of Education.....	2

The following texts are mentioned once: Henderson, Principles of Education; Ross, Social Psychology; Munsterberg, Psychology and the Teacher; Holmes, Conservation of the Child; Dewey, How We Think; Baldwin, Physical Growth and School Progress; Colvin and Bagley, Human Behavior; Ladd, Outlines of Descriptive Psychology; Kirkpatrick, Individual in the Making; Baldwin, Mental Development; Oppenheim, Development of the Child; Sully, Studies of Childhood; Sandiford, Mental and Physical Life of School Children. Various articles by Woodworth, Hollingworth, and Cattell and Valentine are referred to. Books by Stein and Breitweiser are mentioned but not by titles.

In forty-eight institutions the sole method of teaching mentioned is lecturing. In eleven, lectures and laboratory, in five, laboratory principally. In sixteen institutions there is a well equipped laboratory, including full sets of the Whipple material and Binet tests. Five institutions mention the school system as their laboratory. The lack of laboratory equipment is in itself serious but unless the instructor in charge has had efficient training in the technic of such pedagogical apparatus it probably is better to do without any laboratory whatsoever. Doubtless much harm has been done by inexperienced experimenters attempting to use, for example, the Binet tests. For the present, at least, it seems important to distinguish between the theoretical educational psychologist and the laboratory expert. Eventually the former and the latter should be one and the same person if the subject is to attain its scientific standards.

Summary.—Colvin's The Learning Process is mentioned by eleven institutions and Thorndike's several texts twenty-four times. It probably is unfair to draw any fixed conclusions in this connection but it would seem that last year Thorndike and Colvin texts were used more extensively than other texts in this field. The lecture method prevails. Well equipped laboratories are available in about one-third of the institutions.

D. CONCEPTIONS OF STANDARD COURSES IN EDUCATIONAL PSYCHOLOGY

Replies to this section of the questionnaire cover a wide range of opinion. No two correspondents agree. The reader will

appreciate the problem of standardizing this subject when he glances over the following suggestions:

Should be based on ground work of experimentation and observation. Include applications of instincts, capacities, habits, types of learning—memory, thinking process, feeling with more consideration of experimental results.

Brief introduction to genetic psychology followed by more thorough study of instincts, habit, memory, etc.

One semester of child psychology and one of adolescent psychology.

Consist of laws of mental development and facts related to methods according to which mature mental processes function in educational applications.

Consist of a three hour course in general educational psychology, a three hour course in general psychology and special courses in individual differences with emphasis on psychology of school subjects.

Should cover analysis of the learning process with experimental results gained from experiments in the field of habit, memory, association and imagination.

One year of general and educational psychology combined and a second year in psychology of adolescence, mental defectives and graduate courses in same general field.

The point of view should be prevailingly genetic.

One year of theoretical discussions supplemented by practical tests.

Experiments in the learning process and a good text and lecture course.

Introductory general psychology, introductory educational and genetic psychology with advanced and graduate courses.

Laws of growth and the educative process.

Reasonable analysis of the child mind and life, the nature and purpose of the school, various methods of teaching based on psychology of learning and of school subjects.

The foregoing suggestions should be enriched by a few citations of methods found successful in some schools. Colvin at Brown University offers a one semester undergraduate course to seniors followed by a practical course in "Introduction to Secondary Teaching" with observation and some slight practice. In this second course the more general principles of the

first course are given practical application. A graduate course is offered consisting of laboratory work, readings, discussions and problems under school conditions. Kohl of Mount Holyoke writes:

"I have had the best success the past year I have ever had. My students all go out to teach in small high schools. I have visited more than 200 classes in high schools the past year and I take actual concrete school situations and present them to the classes to psychologize. This has given vitality to the work and puts the students face to face with applying psychology to problems which they are to meet daily in teaching. It is a very difficult matter to get the material, but it counts."

Davidson of Leland Stanford writes:

". . . the subject should be so arranged and presented that it should not merely offer a 'point of view' but rather a substantial basis for teaching and educational practice. To this end each sub-division of the subject should turn upon the study of one main type of mental process and this be prosecuted with thoroughness especially with reference to age differences and pedagogical applications after the ground has been covered in more general courses. When this is done the student should be ready for the details of pedagogical technique in advanced courses in mental testing and experimental pedagogy. The work would then have three phases: first, as introduction to psychology, educational and genetic; then the substance of the subject in about four or five semester courses either contemporaneously or in sequence, and finally the drill in the application to mental testing and pedagogical practice. I assume that laboratory practice and statistical method will be taken care of either incidentally or in separate courses. All of this is with reference to students who will be educators, that is either supervising school officers, normal school instructors or college instructors in education, and of course educational investigators. For secondary teachers the course could probably at present not be so thorough and would have to be adapted, but still with reference to the same three phases."

Davidson suggests also that courses in education should be differentiated according to the type of educator in view, and that with such an organization in mind the subject matter even of educational psychology would vary with the class of students being prepared.

J. Carleton Bell of Texas and Terman of Leland Stanford emphasize the need of stressing the behavior point of view in educational psychology. Hints of the same attitude are scattered throughout several replies.

Summary.—The various suggestions regarding standard courses indicate strongly that the learning process should form the backbone of the course and that there should be constant application of this process in laboratories or in the school system. That is, the trend as expressed in these suggestions is purely scientific. The learning process is to be studied experimentally not *a priori*, and the field of experimentation is preferably the school system where conditions are normal for scientific investi-

gation. There is of course no end of difficulties to be faced in articulating with the public school system, but difficult as the situation is there is no other wholly adequate means of arriving at pedagogical truth. The suggestion of arrangement of courses in educational psychology with sequence and correlation of subjects seems to follow that in actual practise. Whether or not the present organization is the best possible deserves free discussion at a representative conference of instructors in this field.

E. GENERAL CONCLUSIONS

In the beginning of this article it was stated that education and especially educational psychology claims to be a scientific subject because it prosecutes courses by means of experimentation and investigation. The questionnaire correspondence reported in the preceding pages supports this claim. A few general conclusions are quite obvious.

1. There is no general agreement on terminology or on the structure of courses in educational psychology. There should be some standardizing agency to bring about uniformity in these respects.

2. In general, courses include the study of the learning process with special attention to instincts, habit formation, imaging with particular reference to memory, association, thinking. School subjects are being analyzed psychologically. "Individual differences" are receiving much attention in connection with the study of exceptional children and the problem of retardation. The science of measurements is included as the *sine qua non* of accuracy in experimentation and investigation.

3. In seventeen institutions educational psychology is a distinct chair. In twenty-eight institutions the chair is combined with other subjects.

4. The most popular subject-combination is philosophy and education but there is noticeable a logical correlation, in the majority of cases, between educational psychology and other subjects taught by the same instructor.

5. General psychology prevails as a prerequisite to educational psychology. In this connection certain administrative problems appear important:

- a. Will a prerequisite course in general psychology, interpreted on a purely introspective basis, serve adequately as an

introduction to a course in educational psychology interpreted functionally and taught experimentally?

b. To what extent is it possible in the transfer of credits from school to school to recognize one type of psychology as taught elsewhere and offered as prerequisite to or in place of certain educational psychology courses in another school? In other words, should the mere time value (units) of a prerequisite suffice as now seems to be the only feasible method?

c. Should not courses in educational psychology serve a purpose so specific, that, unless the general courses in pure psychology are equally specific, there must be a distinct type of psychological propaedeutic to unify and make logical the advance from elementary to higher studies in this field? Is pure psychology *per se* a sufficient introduction to educational psychology as a study of specific applications?

d. May it not become necessary to have as prerequisites to educational psychology a distinct type of introductory psychology which deals with only those problems that require in higher courses a fuller and pedagogical treatment?

e. The suggestion that biology be substituted for general psychology as a more logical and helpful introduction to educational courses deserves careful consideration.

6. One semester courses in educational psychology predominate.

7. Texts by Thorndike and Colvin are used most frequently.

8. The lecture method is most popular, but in several institutions this is supplemented by laboratory methods.

9. In about one-third of the institutions there are fully equipped pedagogical laboratories.

10. Conceptions of standard courses stress the importance of experimentation, specific problems, application of the principles and laws of the learning process in school work, the differentiation of courses according to the type of "educator" in view.

11. In spite of much confusion of terminology and organization of courses there is evident a strong trend toward a well defined science of educational psychology. It is impossible to predict exactly what its standardized contents will eventually be. It is altogether possible, however, that the organization now in vogue will form an important basis for modification and elaboration.