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State Manual Training Normal School

THE TECHNE

Life Without Labor is a Crime, Labor Without Art and the Amenities of Life is Brutality.—Ruskin.

Vol. XV November-December, 1931 No. 2

DIFFICULTY IN ACHIEVING FAIR-MINDEDNESS

To take sides, to find something to praise or blame, and then follow the purpose of blame or praise to control all one's ideas of a social situation is almost as natural to humanity as it is to breathe. The idler on the bank of a stream can with difficulty observe two chips floating downwards near each other without thinking of them as engaged in a struggle and identifying himself with one against the other. When the conflict is actual and is human, when it includes within itself forces and interests wherein the spectator is already committed by education, prejudice and aspiration, impartiality of observation and report is well nigh beyond human power. —John Dewey in "Introduction" to "Humanity Uprooted" by Maurice Hindus.

Published by
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Pittsburg, Kansas

THE TECHNE

Published by the Kansas State Teachers College of Pittsburg
Pittsburg, Kansas

W. A. Brandenburg, President

Vol. XV November-December, 1931 No.

THE TECHNE publishes, for the most part, papers on educational subject though articles on closely related fields are also used. Part of these papers set forth the results of research; others aim at interpretation of current developments. Though some of the discussions will interest the specialist, it is hoped that in every number there will be something useful for the average teacher.

THE TECHNE is sent free to alumni, school officials, libraries, and, on request to any person interested in the progress of education.

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COLLEGE MARKS

An Inventory of the Attitude of College Instructors

Edgar Mendenhall, Director of Research

The problem of how to mark students, like the ghost of Banquo, will not down. Under our present educational system no "Avaunt and quit my sight" will exorcise this spook, at least for some time to come. So long as this is true we should indulge efforts to make more bearable an ever present though unwelcome guest.

Notwithstanding the existence of abundant literature upon marks and marking systems no scheme has or likely will be devised whereby students will receive by its use marks that are absolutely accurate and fair. Human frailty always attends the use of any device and the application of principles. In spite of thought and care, error will creep in. Nevertheless we may trust and trust with assurance that error may be reduced and accuracy more nearly approximated when literature upon marks continue to appear, and when fundamental principles are thought through and sensibly applied.

This is the philosophy that has prompted the writer in the preparation of this inquiry. He trusts that there has been some "method" in his "madness."

The following inquiry was first handed to the faculty of the institution of which the writer is a member. It was then distributed to faculties of other schools as indicated in the tabulation. The comments of the several recipients are given since they give a number of "slants" and a freshness to what otherwise may be dry reading.

The form letter to instructors, the inquiry tabulated with "remarks" follows:

To College Instructors:

Notwithstanding the fact that a number of studies have been made of college marks, and that many higher institutions regularly compile the marks of their instructors showing distributions, great diversity in marking students still persists.

No doubt a certain degree of diversity in marking is a healthy sign. The cold, mechanical use of any marking system by an instructor or an institution is deadening. Nevertheless, too great a diversity in marking is also open to criticism. This fact has lead to the formulation of the attached inquiry.

It is recognized that the way and the care with which each instructor will mark each statement on the pages following will depend upon his "mental set"—(1) the importance he places upon such an investigation, (2) how significant he regards the marking of students, (3) whether he feels it possible or desirable to mark students scientifically, and (4) his belief as to how human abilities are distributed.

The problems of college marking of course will not be solved by mere weight of opinion. The approach to a satisfactory solution will come only from painstaking experimentation. Nevertheless, if this inquiry only slightly stimulates a desire (1) to make college marks more accurate, (2) make them more meaningful and hence, (3) more comparable, it will have served its purpose.

Most respectfully,

Edgar Mendenhall,
Director of Research,
Kansas State Teachers College
Pittsburg, Kansas.

Note: The return of this inquiry thoughtfully marked will be appreciated.

Note:

(1) Please read through all the ten statements before marking any one.

(2) Try to get the intent of each statement by reflection upon its meaning.

(3) When marks follow the normal probability curve, a distribution similar to the following is meant: A's 7% B's 24% C's 38% D's 24% F's 7%

(4) By objective methods or objective tests is meant, methods or tests that tend to eliminate personal judgements in marking.

(5) In marking each statement do not consider isolated or exceptional cases. Consider each statement in the large.

You are to express your opinion by underlining one of the words that follow each statement.

1. Because of the educational and social significance of college marks, it is desirable that instructors give more consideration to methods of securing more accurate marks and of distributing such in the best way.

	True	False
K. S. T. C. Pittsburg, Kansas	55	
M. S. T. C. Ypsilanti, Michigan	52	
W. S. N. S. Cheney, Washington	37	2
I. S. T. C. Cedar Falls, Iowa	34	
N. S. T. C. Aberdeen, South Dakota	14	1
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
W. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., N. Y.	5	
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	3	
K. S. A. C. Manhattan, Kansas	1	
Total	208	3

REMARKS

W. S. N. S. Cheney, Washington.

"True. If the colleges are determined to give percentage marks." (Anon.)

"Does such a grade have a social significance? I do not see that percentile distribution is of import." (English)

I. S. T. C. Cedar Falls, Iowa

University of Kansas

"True. I am firmly convinced that we need a more careful and conscientious marking on the part of teachers." (Earth Science)

"True. I think we might add ECONOMICAL significance." (Psychology Tests & Meas.)

N. S. T. C. Aberdeen, South Dakota.

"True. With the present educational organization it is necessary for students to value marks. Therefore, they, both students and marks, must be given serious consideration." (Methods & Supervision)

"True. This seems meaningless. There is no need to worry about distribution if we can arrive at methods of securing accurate marks. Nor can we expect a normal distribution unless the group is 'sufficiently large'. The meaning of the latter also needs to be cleaned up. (Physics & Chemistry)

"True. Distributions are now often guess-work." (Methods and Manage.)

"True. Some may no doubt be already carrying normal distribution to excess, but by and large consideration of accuracy and distribution is desirable." (Education)

"True. In my opinion the present 'educational and social significance of college marks' should be changed. Educators should work in this direction." (Anon)

University of Cincinnati

"True, generally speaking; but uniform standards for excellence are more important and probably tend to make a grade mean more the same thing in different schools and with different instructors in the same school." (Mathematics)

K. S. A. C. Manhattan, Kansas

"True. Not only for these reasons but because of the financial importance of college degrees since their possession is a necessary condition of many appointments." (Chemistry)

M. S. N. C. Ypsilanti, Michigan

"True. If the marks are accurate, they will distribute themselves." (Mathematics)

"True. But it is proper to ask whether this significance is not a false one, created by the historical marking system itself, and not by the really educative aspect of our school systems." (Psychology, Philosophy, Greek Mythology)

"True. If they are to be given, more of an effort should be made to make them more objective." (Prin. Training School)

2. As far as possible, marks should be determined by objective methods or tests.

	True	False
K. S. T. C. Pittsburg, Kansas	54	1
M. S. N. C. Ypsilanti, Michigan	47	5
W. S. N. S. Cheney, Washington	34	6
I. S. T. C. Cedar Falls, Iowa	36	
N. S. T. C. Aberdeen, South Dakota	13	2
K. S. T. C. Emporia, Kansas	1	1
C. S. T. C. Greeley, Colorado	1	
W. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., N. Y.	5	
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	2	
K. S. A. C. Manhattan, Kansas	1	
Total	198	15

REMARKS

K. S. T. C. Pittsburg, Kansas

"True, with some reservations." (Economics)

"True if it is to indicate scholarship or achievement." (Phy. Ed.)

"True. This is, as yet, not fully worked out in industrial education courses. Not so much as in others." (Industrial Art)

"True, but the objective methods are hard to use in certain phases of English Composition, for example." (English)

"True. With due regard to 'as far as possible.' I do not believe we have adequate means of grading all things objectively." (Education)

W. S. N. C. Cheney, Washington

"True. With proviso that some essay type of examination be given to determine whether students can express their thoughts in their own words." (Geography)

"That is neither true or false." (English)

"True. True in the main, but I believe at least one essay-type test should be given during the latter part of the course in each term." (Chemistry & Physics)

"True. If there is more guarantee that the same grading represents the same standards of work when measured by different individuals. This I doubt." (Anon)

I. S. T. C. Cedar Falls, Iowa

"True. I do not consider it possible to determine marks entirely by ordinary objective tests. Many facts in science are not absolute, but relative. Your ordinary objective test does not recognize this suffi-

ciently. It does not show the ability of the student to develop a line of reasoning and draw conclusions." (Biological Sciences)

"True, but the student should not be placed invariably in the highest group if he has the highest average in objective tests. Ability to analyze a situation must be a conspicuous factor in some subjects." —(History).

"True. Partially."

"True. If and when reliable impersonal judgments can be secured of all types of desired achievements. This assumes that the best administration of essay type work may be the most impersonal and valid measure for part of the work. It is recognized, of course, that the 2 to 5 response or recognition type eliminates personal judgment at the time of marking, but each judgment was made in forming a key. So far as the student's identity is concerned, that matter can be handled in essay papers." (Education & Psychology)

"True. As a specialist in the field of testing, however, I hasten to add that I do not advocate discontinuing the essay type of test entirely." (Rural Education)

"True. The objective test is in some measure a reminder to the teacher of the effectiveness of his teaching." (Earth Science)

N. S. T. C. Aberdeen, South Dakota

"True. Not all products of learning can be measured objectively." (Education)

"True. This only applies to specific subject matter and not to additional valuable material." (Accounting, Salesmanship, Bus. Law)

"True. This should be supplemented by some in organization and problem work." (Methods and Management)

"False. It is possible, I think, to make *all* tests objective, but I doubt whether all the things we want to test can be tested by them. The power to analyze a paragraph, to organize a set of facts in narrative form, to compare two individuals or eras, can be tested better in other ways." (History)

"True. As far as possible 'saves the day.' It is not *entirely* possible nor desirable." (Anon)

K. S. T. C. Emporia, Kansas

"A judicious combination is desirable." (History & Social Science)

University of Cincinnati

"True. The exception I myself make is due to failure of certain other instructors sometimes to shoulder their part of the responsibility. In that case I will not give a graduate student several marks each carrying negative honor points." (Education)

University of Kansas

"True, if 'as far as possible' means 'as far as is sensible'." "False, if 'as far as possible' means that no other kinds of tests are used. This would of course be possible." (Mathematics)

Anonymous

"I believe with some subjects it is not practically possible to use tests that may be graded objectively."

M. S. N. C. Ypsilanti, Michigan

"True. More objective tests should be used. Many things should be rated which are not given attention." **(Prin. Training School)**

"True. So long as we have the vicious marking system, a spill-over from the wage system in industry, the objective are the preferable methods." (Psychology, Philosophy, Greek Mythology)

"True, within limits. I believe ability to discuss the subject orally, and in ocassional essay type papers should also be considered." **(Psychology)**

"True, if you mean by objective tests the grading of students not on a personal feeling about them but on their actual knowledge." (English)

"False. Tests help measure but should not be everything. Combined judgments of instructors seems invaluable in estimating a student's worth." (Handwriting)

"False. This depends much on whether an art or science is being taught. Objective tests are not adequate, e.g., in teaching public speaking." (Speech)

"False. Applies to very large classes of a hundred or more. In small classes of 25 or fewer, the teacher's judgment should count most." (Zoology)

3. As far as possible, marks should represent achievement in subject-matter only, excluding estimates of attention, application, and regularity of attendance, etc.*

	True	False
K. S. T. C. Pittsburg, Kansas	43	10
W. S. N. C. Cheney, Washington	38	4
I. S. T. C. Cedar Falls, Iowa	35	6
M. S. N. C. Ypsilanti, Michigan	24	10
N. S. T. C. Aberdeen, South Dakota	12	3
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
W. S. T. C. Kalamazoo, Michigan	1	
Teachers College, Columbia U., N. Y.	3	
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	2	
K. S. A. C. Manhattan, Kansas	1	
Total	164	33

*The importance of attention, application, and regularity of attendance, etc. should not be minimized but should be taken care of in some other way.

REMARKS

K. S. T. C. Pittsburg, Kansas

"True, provided it does not represent '*memorized* knowledge' *only*, but a combination--this with digested thought knowledge." (Econom.)

"True, I'm not sure that unexcused absences should not be taken into consideration." (Commerce)

"True. Would like to know a means of satisfying the students who are interested, attends well, etc., whose grade is low on objective tests." (Industrial Art)

"True. In our school where attendance is required I think it wise to deduct credit for continued absence. Take off one hour credit for so many classes missed." (Accounting)

"True. Marks should represent achievement in subject matter *largely*, but must take some account of attention, etc., until some other marks will—by all means in some other way." (Mathematics)

"True. Depends on how it is taken care of." (Geography)

"False. Regularity of attendance cannot be over-emphasized." (Phy. Ed)

"True. Hard to take care of grades of classes in floor work without including regularity of attendance, etc., in the marks. True in physical education." (Physical Education)

"True for subject matter records. These qualities should be checked against a college student, if he has failed to get most out of his college work.

W. S. N. S. Cheney, Washington

"True. If subject matter includes appreciations, methods of work, attitudes, and ideals that may be essential to success in the subject or activity then this is true; if not then this is false." (Education)

"True. True in one sense—but does it always give fair grading to the ungifted child?" (Anon)

"False. It is possible to grade attention, application, and regularity of attendance separately." (Physical Education)

I. S. T. C. Cedar Falls, Iowa

"False. The general attitude of the students should be considered. I expect a student to develop certain abilities in the laboratory which an objective test does not test." (Biological Sciences)

"True. In general this is O. K. but it works out an injustice in the cases of two extremes: the bright who achieve easily and learn to 'loaf,' and the plodder who needs stimulation for encouragement." (Psychology and Educational Psychology)

"True—granting achievement means final ability of course." (Psy.)

"True—Lack of application and attention bring their own reward. If not, then the teacher is not concerned." (Extension & Rural Ed.)

"True. If attention, application, etc. are taken care of in some

other way, students are likely to become careless in these habits and will not do as well in class." (History and Prin. of Ed.)

"This statement is more largely true than false, although I hesitated some time before marking it so. It seems to me that a final mark in the subject matter which is scientifically given of necessity included the factors of attention, application and regularity of attendance if these factors are significant. If the student is able to attain a high mark without attention, application or regularity of attendance, it is evident that what went on in the classroom was of little concern." (Extension Division.)

"Is probably true in the main, but as long as there is little or no way at present for an instructor to express the standing of a student in these qualities except through grades and since there is but one grade given in each subject it seems questionable as to the advisability of eliminating them altogether from the grades." (Physical Education)

"True—but I interpret achievement as actual progress made in a course, even to a mediocre standing, when a student by diligent application has mastered an appreciable amount of material." (Eng.)

N. S. T. C. Aberdeen, South Dakota

"False. Marks are an indication of more than the gaining of subject matter. An important question is how to test and mark the other phases without personal judgment entering into the marking." (Meth- & Supervision)

"True. These qualities have their influence upon success." (Methods & Management)

"True. That is in schools below the university, certainly there should be different sets of marks for achievement, attention, application, attendance." (History)

"True. If we have a fairly accurate measure of what has really been achieved during the particular term. Attention, application, etc. affect achievement." (Anon)

"True. I believe that the development of permanent interests should be an objective; but perhaps that is measured when achievement is measured." (Psychology)

University of Cincinnati

"True. I am assuming that it *can*, but am more doubtful of the assumption as a matter of practical administration." (Education)

University of Kansas

"Marks, in many cases, should represent achievement in mental power, changed attitudes of mind, fairmindedness, etc., as well as in subject matter. Again, the clause 'as far as possible' destroys the possibility of answering categorically as necessarily true or false. Interpretation varies." (Mathematics)

K. S. A. C. Manhattan, Kansas

"Yes. Marks should represent achievement, relative achievement, and not be distorted to force conformity to a set curve." (Chemistry)

M. S. N. C., Ypsilanti, Michigan

"True. Estimates of attention, etc., are subjective and thus vitiate marks when combined with those determined by objective tests. Moreover, the things here marked are likely to be results of teacher inadequacy rather than of pupil deficiencies." (Psy., Phil., and Greek Mythology)

"Yes, within reason." (Education)

"If achievement represents the highest possible attainment, the other matters, attention, etc. take care of themselves." (Ind. Arts).

"Mental attitude toward the subject, especially keenness of interest in it, should also be considered." (Psychology)

"Yes, if real achievement can be honestly measured." (Physics & Astronomy)

"I do not agree. Achievement in subject matter cannot be divorced from attitudes, understanding, etc." (History & Philosophy of Ed.)

"False. In small groups there are usually extenuating circumstance justifying use of opinion." (Educational Psychology)

"Would be glad to hear of some other way that would work." (Anatomy and Physiology)

"True. Ideally true but in many of our schools the students are not ready for such grading." (Home economics)

"Partly true. Partly false." (English)

"If the formality of so many classes for so much credit could be dispensed with entirely, then advance in subject matter and nothing else should count." (English)

"Attention, application, regularity of attendance should be *included* in our marks. In a professional school marks should include the items below." (Referring to attention, etc.). (Geography)

"I agree as a whole unless taken care of separately in a professional school, application, etc. should be considered." (Geography)

"True. Except as some particular ability is part of the ability you are trying to create. A teacher of children's dramatics must acquire or have the ability to be on time and to take responsibilities." (Reading Methods. Methods in Teaching Children's Dramatics)

"I believe the marks should represent also achievement in ability to think." (Physics)

"There is so much to be said on both sides here that I cannot answer in a word." (English)

"Marks should include creative contributions to the group. Subject matter is only one item to be considered." (History of Education)

"Contribution of student to class discussions, his ability to search out truths for himself and draw conclusions should be considered in marking. Too many "A" students know their books but when that is said, all is said." (Handwriting)

"This is one very minor thing and should be taken care of in some otherway." (Principal, Training school)

"Yes, life pays us for what we do; not for how hard we tried to do it." (English)

"If one mark is given, it should indicate the final attainment in the subject by the student, including knowledge of subject matter and training." (Zoology)

"But should not be sole basis for grading." (Physical Education)

4. In a majority of cases, when two distributions are compared, the one more nearly approximately the normal probability curve better represents actual achievement.

	True	False
K. S. T. C. Pittsburg, Kansas	43	9
W. S. N. S. Cheney, Washington	36	4
I. S. T. C. Cedar Falls, Iowa	34	3
M. S. N. C. Ypsilanti, Michigan	31	11
N. S. T. C. Aberdeen, South Dakota	11	4
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
W. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., N. Y.	2	1
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	1	
K. S. A. C. Manhattan, Kansas		1
Total	165	33

REMARKS

K. S. T. C. Pittsburg, Kansas

"True. This is particularly true when the two distributions cover two classes in the same subject, such as two shorthand classes." (Commerce)

"True. Not necessarily true if considering small groups, as is usually done in class grading." (Education)

"True. Not in all cases. A small class of majors in the department should have a greater per cent of A's. (Art)

"True—provided the tests are the same and the number sufficient." (History and Social Science)

"False. I am not sold on the curve as yet especially in major subjects and never in physical education." (Physical Education)

"Not necessarily true or false assuming that the grades are actually proportional to achievement, there are several good reasons why they may not fit the normal probability curve." (Mathematics)

"True if all type of schools or departments are compared." (Home Ec.)

W. S. N. S. Cheney, Washington

"True. If the person has been placed in a wrong group where the judgment or placement test are used, then it would be false." (Anon)

"True. I think this is only true where there is not an excess of high marks." (Physical Education)

"True. Provided the class is large enough to take care of the rating of students who may have exceptional native ability or special training in that type of work. As in public school music, many may be majors in music some can hardly read notes. The performance of the former will be much better than of the latter. If all were beginners the curve could be normal and should be." (Education)

"True. I am assuming that the group is large enough to expect a normal distribution." (Education)

"True. What is normal probability?" (English)

....I. S. T. C. Cedar Falls, Iowa

"True. In my experience I have found this predominately true." (Earth Science)

"True in large classes. Not true in small classes of advanced students." (Anon)

"True. This only to be taken when group numbers are large. It does not follow with small advanced classes or groups." (Physics)

"True, meaning a majority or term or semester as well as a majority of individuals in one term." (History)

"True if a large number of cases be under consideration." (Econ. & Soc.)

"True. I emphasize 'majority' not in all cases." (Mathematics)

"True if there is not some selective factor operating in one group which is not found in the other. Other things being equal, the statement above is true." (Psychology and Child Psychology)

"True unless the one distribution is merely forced into the 'mold' of the normal curve after being made out on subjective bases. This happens often." (Anon)

"True. (1) If the group tested is a *normal* and not a *select* group. (2) If also the test is of material just learned a pre- and a final test would indicate the amount learned. (Education)

"True—provided a wide range of talent and extensive sampling of wide range of difficulty; lacking these, a skewed distribution might be 'normal' for the particular case." (Dept. of Education & Psychology)

"False. A normal distribution is more likely to represent a variable unit of measurement than a correct view of actual achievement." (Mathematics)

"True with limitations. I believe this is in general true if the distribution is a fairly large number of marks, and not necessarily so of a small number." (Physics)

N. S. T. C. Aberdeen, South Dakota

"True in large classes. A large number of cases are necessary if we expect to approximate the normal curve." (Methods & Supervision)

"True—subject to error of sampling." (Education)

"False. Too many instructors work to have their distribution approach the normal curve." (Accounting, Bus. Law, Salesmanship)

"True. If the test is too easy or too difficult it is not a test." (Methods & Management)

"False. This would be apt to be true if the groups were 'sufficiently large' but I don't believe most of them are. Then if we try to follow a *normal* curve, we are making one of the biggest grading errors." (Physics & Chemistry)

"True. Judgment should not be subordinated to secure approximation. Sometimes I wonder of some teachers do not abdicate judgment for the form of science." (History)

University of Wisconsin

"True—if the subject matter is equally comprehensible in both tests." (Education)

University of Kansas

"Depends on size of group and special training of group." (Math.)

"It should always be borne in mind that the law of probable errors (the basis of the normal distribution curve) will not give a good approximation, in general, to any life situation if the number of cases or observations is small. Would a life insurance company take observation on 25 or 50 or even 500 lengths of life of individuals and base their rates on such a table of mortality? If they did, the probabilities are that they would not be permitted to do business in any state in the U. S. Any teacher who attempts to distribute grades by the normal distribution (law of probable error) in a class of less than 100 students is likely to do more injustice, in my opinion, than he would be assigning grades according to examinations, standard tests and his personal knowledge of the individuals, and no attention paid to any theoretical distribution." (Math.)

M. S. N. C. Ypsilanti, Michigan

"False. This implies that the majority of cases are large rather than small or even median sized cases, which can hardly be the case." (Psychology, Philosophy, and Greek Mythology)

"True. In classes of 40 or more students—unselected." (Elementary Education)

"I do not accept the 'curve' with its 7% of F's, especially in subjects of student's major interest, and in their 3rd and 4th year as I have them." (Applied Anatomy, Health Education)

"True. In cases where elective courses are taken by coloured students the 'curve' frequently does not function." (History)

"False. Depends on whether it is advanced class or not." (Speech)

"This is open to question. It may be more probable, but the positive statement is not justified." (History and Philosophy of Education)

"False. Not necessarily so, particularly with groups under fifty." (Educational Psychology)

"True, provided number of cases is sufficiently large and it is not a select group." (Psychology and Education)

"True. The above statement depends upon the size of the group.

It probably would not be true in case of too small a group—of say, 10 to 20 students." (Chemistry)

"True. There are exceptional classes with no failures. Often teachers feel obliged to mark classes down to the curve. This is unfair." (Anatomy and Physiology)

"False. This would depend upon many other considerations; it is difficult to answer it by just true or false, but since there are many exceptions, I have marked it false." (Geography)

"If the number is large enough, true; otherwise, not." (Geography)

"False. Class groups are many times highly selective in character." (History of Education)

"False. Not likely to be true in advanced classes in any subject, since the poorer students are likely to have dropped out." (Speech)

"False. Classes differ greatly just as people do. Probably curve should be considered with *very large* classes only." (Zoology)

"True if several hundred cases are used. Not true for small classes." (Education)

"False. So many factors operating." Education

"True. Except in some special groups where the work is elective." (Industrial Arts)

5. In a majority of cases, when two distributions are compared, the one determined by the results of objective tests better represents actual achievement.

	True	False
K. S. T. C. Pittsburg, Kansas	52	2
M. S. N. C. Ypsilanti, Michigan	46	6
W. S. N. S. Cheney, Washington	32	7
I. S. T. C. Cedar Falls, Iowa	32	1
N. S. T. C. Aberdeen, South Dakota	12	3
K. S. T. C. Emporia, Kansas	1	1
C. S. T. C. Greeley, Colorado	1	
W. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., N. Y.	4	
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	2	
K. S. A. C. Manhattan, Kansas	1	
Total	187	20

REMARKS

K. S. T. C. Pittsburg, Kansas

"True, if it consists of memory plus digested thought knowledge." (Economics)

"True, provided the test is a valid test." (Education)

"True. Marks should be based upon a number of objective tests, not on one or two only." (Mathematics)

"True, because of objective tests are more accurate and would vary less from other tests given by a number of different instructors." (Physical Education)

"True. This answer I would qualify in some respects. I want 'objective tests' to be of several types and then I am not certain about whether we can discover ability to organize and apply which is a part of achievement." (Rural Education)

"True, upon conditions above." (History and Social Science)

W. S. N. S. Cheney, Washington

"True. If objective tests can be made so that they mean the same thing to all persons at all times and in all places—no misunderstanding whatever." (Anon)

"So much depends on the reliability of the tests used." (Textiles and Clothing)

"True. But some may say that objective tests are subjectively chosen, and poorly." (Education)

"Only in an examination on bare facts." (English)

I. S. T. C., Cedar Falls, Iowa

"True for certain kinds of achievement." (Biological Sciences)

"True in some subjects." (Economics and Sociology)

"True, if tests are properly chosen. Mere fact questions with objective scores may often be mistaken for signs of achievement." (Psychology and Educational Psychology)

"True if the objective test is so devised as to measure actual achievement." (Education)

"True if the objective tests are developed so as to give students thought as well as memory reactions." (Anon)

"Probably true, but not alone because of the test type; use of such tests in recent years has itself been indicative of interest in and attention to the problem of measurement. Equally a serious approach to essay type test has shown to produce marked improvement." (Education and Psychology)

"True other things being equal." (Rural Education)

"True depending on the kind of objective tests." (Elem. Edu.)

"Am not sure about this, it would only be an assumption to answer it anyway." (Physics)

"True. However, there are other certain elements in achievement that cannot be measured and can, therefore, only be matters of opinion." (Mathematics)

"True, except as qualified in number (2)." (History)

"It seems to me that this will depend upon the nature and quality of the test. Probably true if the two tests compared are equally good of the kind." (Physics)

"True. I find grades on an objective test more often fall in a normal curve than from non-objective type."

N. S. T. C. Aberdeen, South Dakota

"False. I doubt it very much. This would be true if no other

elements were included in estimation of grades." (Acc't. Bus. Law Salesmanship)

"True. The other is too often a matter of opinion and is based on likes and dislikes." (Methods & Management)

"True—that is if the achievement which it is desired to estimate is that of factual knowledge." (History)

"False. If objective tests is to be interpreted to include all objective evidence I would mark this statement *true*."

State Normal, Lewiston, Idaho

"True, if the objective test is valid and reliable." (Ed. & Psy.)

Teachers College, Columbia U., N. Y.

"Depends on what aspects of 'two distributions' you have in mind." (Psychology)

University of Kansas

"I do not have much of an opinion on this point. In general, in mathematics classes of 25 or less, I believe the teacher's knowledge of a student's daily accomplishments and understanding of the work is more reliable than a single objective test. If many objective tests were made the statement might be true." (Math.)

M. S. N. C. Ypsilanti, Michigan

True. This refers to actual achievement in parroting desired responses and not in understanding either the oppositeness of these responses to their generative situations or the consequences of thinking the way parroted." (Psychology, Philosophy, and Greek Mythology)

"True. Should not objective scoring be insisted on as well as objective tests." (Elementary Education)

"True. Again this depends upon the student's familiarity with the type of test." (Geography)

"True. A curve plotted from results of objective tests will likely approximate the normal probability curve." (Handwriting)

True. In that particular thing if it is of such a nature that a reliable test is possible." (Principal, Training School)

"True. Only in a degree; exceptions for nervous students (especially girls) are common." (English)

"False. Not true in teaching an art." (Speech)

"True. Many of the tests at present are inadequate, however," (Industrial Arts)

6. Students who know their marks are determined in large measure by objective tests and that these marks are to be distributed with a reasonable consideration of the normal probability curve, will likely excel in scholarship other students of like native ability without such information.

	True	False
K. S. T. C. Pittsburg. Kansas	36	11
M. S. N. C. Ypsilanti, Michigan	36	9
W. S. N. S. Cheney, Washington	30	9

I. S. T. C. Cedar Falls, Iowa	31	4
N. S. T. C. Aberdeen, South Dakota	8	5
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
M. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., N. Y.	2	1
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	1	
K. S. A. C. Manhattan, Kansas		1
Total	151	41

REMARKS

K. S. T. C. Pittsburg, Kansas

"True. Not always true. I base my statement on remarks heard from various students, that no matter how hard they try, they know at the beginning that a certain per cent will fail, etc. Others like it because it eliminates all personal element in grades." (Physical Education)

"True. Student who know that their grades will indicate *achievement* rather than follow some distribution curve will work to accomplish that *achievement.*" (Mathematics)

"True. Provided the students have confidence in the validity of the tests." (Education)

"True. When marks are distributed as suggested, students feel that the grades more definitely represent the work done." (Ind. Arts)

"Probably true though I think we have no good basis for this judgment." (Home Economics)

"If scholarship means amount of achievement, *true.*" (Related Art)

"True. However, some students become discouraged if they feel that the normal curve will be followed strictly." (Art)

"False. This so-called 'normal probability curve' acts at all times by assumption, whether all are of equal diligence or unequal diligence. It is highly fatalistic. Students object to its inexorable application in class by class." (History)

"False. My doubts on this proposition do not permit an affirmative vote. To me this proposition is exceedingly ambiguous and should be restated." (Economics)

W. S. N. S. Cheney, Washington

"True. There would not be as much bluffing to stand well with the instructor, but more time would be used on getting the learning product and not on earning a good mark." (Education)

"True. Students too often "size up" the situation and decide upon their probable chance for high rating dependent upon personnel and size of the class." (Textiles & Clothing)

"True. And with an undesirable motive." (Education)

"False. Only by mathematical manipulation of the data." (English)

I. S. T. C. Cedar Falls, Iowa

"False. I doubt that students are greatly motivated by the kind of test they are to be given." "Probably they are motivated by the fact of the test and its quality." (Physics)

"I cannot answer this question. It seems that any answer would be purely suggestive and hence of little value." (Extension)

"True. This seems to be a fact that ought to be tested." (Math)

"True. Depending upon objective test and application of same." (Elementary Education)

"True. Since this is true the objective test is more effective to students who know the purposes of tests before it is given." (History & Principles of Education)

"True. If tests measure all angles of scholarship, including close discrimination, application and comparison questions rather than simple fact questions alone; and provided the school subject measured are of the information type." (Educational Psychology)

"True. Some have remarkable memories." (Economics & Psychology)

"True. I have tried this in a few instances and find it true." (Earth Science)

"To answer this either way would be more of an assumption than the one above. Probably should be answered false." (Physics)

"True. With an element of doubt." (Rural Education)

N. S. T. C. Aberdeen, South Dakota

"False. It has been my experience that most students do not approve of the normal curve." (Methods & Supervision)

"True. On the other hand it may discourage those who feel that they are in the lower third or half and know that they will be ranked there." (Salesmanship, Bus. Law, Accounting)

"True. There is more of an incentive to work." (Math. & Management)

"True. I am somewhat uncertain about this. I do not think that the knowledge that the normal curve is to be used will affect scholarship; objective tests, however, may lead to better scholarship." (History)

"False. Very few students are trained to interpret marking systems such as described above." (Anon)

"True. I am not sure about the poorer ones." (Psychology)

State Normal, Lewiston, Idaho

"True. Am inclined to think this may be true. Experimental evidence is needed." (Education & Psychology)

Teachers College Columbia University, N. Y.

"Possibly! I don't know." (Psychology)

University of Wisconsin

"Generally this is true, however, many objective tests built by instructors for use in their own work do not function in this way." (Education)

University of Kansas

"Having made no investigation of what students think about these things, I do not know. My guess in the matter would be that students would like to have some, but not all tests objective. I have heard more complaint than commendation by students in discussing results of attempts to use normal distribution in assigning grades in classes in which they have been." (Math.)

M. S. N. C. Ypsilanti, Michigan

"False. I believe such distribution would tend to make the student better satisfied with the grades given them by instructors." (Geography)

"Debatable." (Biology)

"True. With reservations on the use of the curve." (Applied Anatomy, Health Education)

"True. Or possibly false, depending on the student's estimate of the instructor. Might rather take chances on instructor's estimate of his proficiency." (Physics and Astronomy)

"True. If they also know that the chances of cheating are small." (Anatomy and Physiology)

"True. For students who wish to pay for high grades by careful preparation." (Elementary Education)

"True. If they not merely know it, verbally, but if they actually understand what it means for their status. Then if praise or blame is given the individual teacher for conformity to or deviation from this standard, injustice may easily be done, and no good whatever done educationally, in terms of the students concerned and involved." (Psychology, Philosophy & Greek Mythology)

"False. Students with like native ability do not need motivation by objective tests. They attain and keep their standard through competition and class work." (Handwriting)

"True. I have observed this in certain academic classes." (Principal, Training School)

Note: The remaining statements, 7, 8, 9, and 10 are to be marked with this in mind. Take it for granted that you have no other information before you than the two distributions of marks indicated. You do not know anything about the quality of work of the instructors of the institutions. All you have before you are the distributions of the marks themselves. Also re-read note "5" at the beginning of the inquiry.

7. When two distributions of marks are compared, the one having an excess of high marks indicates the easier course and a lower standard than the one approximating the normal probability curve.

	True	False
K. S. T. C. Pittsburg, Kansas	40	8
W. S. N. S. Cheney, Washington	33	7
I. S. T. C. Cedar Falls, Iowa	29	5
M. S. N. C. Ypsilanti, Michigan	25	20
N. S. T. C. Aberdeen, South Dakota	7	5
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
M. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., N. Y.	2	1
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	1	1
K. S. A. C. Manhattan, Kansas		1
Total	144	48

Remarks

K. S. T. C. Pittsburg, Kansas

"True in the majority of cases when the classes are large." (Phy. Ed.)

"Not necessarily. Many factors involved." (Education)

"Not necessarily true as between the different institutions the high marks might indicate that the students coming to that institution had higher I. Q.'s or better preparation. We know that such differences occur." (Mathematics)

"True, but there are fairly numerous exceptions." (English)

"True, to conditions you specify, but may not be actually true." (History & Social Science)

"True, it tends to do so, but is not always true." (Art)

"False. Some courses are motivated to such an extent that all students, or a large percent do a superior grade of work. Some groups in a six-week course far surpass others." (Industrial Arts)

"False. Classes vary. If they did not vary there would be no question as to marking." (History)

"True. This is true unless the students are a highly select group, i.e., above normal intelligence, or have an unusual interest in the work because of its being practical." (Commerce)

"Not necessarily, the higher marks frequently represent superior teaching." (Psychology)

"If taken for a large number, true. Otherwise not necessarily so."

"False. *Emphatically no.*" Anon (Geography)

W. S. N. S. Cheney, Washington.

"True. This explanation automatically makes them all true. It is just a theoretical and general consideration which is answered by the

concepts involved in traits which distribute themselves normally." (Education)

"True. But I have known *many* classes in which *all* students did more that the very highest in other *good* classes." (Education)

"Either one or both of the two factors might be the cause." (History)

"True. It may mean that several of specialized ability are in this class and thus must bring the upper limits of the curve higher. There may be only a few who went low on the standardized test or perhaps few or none reach the upper limits. Generally it would indicate what the statement is in (7)." (Education)

I. S. T. C. Cedar Falls, Iowa

"False. Not always. A student may have a liking for one course and will do a great deal more than is required. In another subject which is taken, because of college requirements, the student's interest may lag." (Earth Science)

"True in the majority of cases in a real large class but this does not hold true in all classes of Juniors, Seniors and Graduate students where the classes are composed almost entirely of majors in a given field." (Economics and Social Science)

"False. Not necessarily. Advanced students and those with special aptitudes, as in Art, cannot for example be so measured. It would apply to general art classes in public school, however." (Art)

"True if other things are equal; same course, same distribution of learning ability, etc." (Child Psychology)

"If the classes are large this is true. If the classes are small and a selected group for such as major students, higher marks must predominate."

"Not necessarily. (1) Maybe select students in an elective course. (2) Maybe highly motivated teaching." (Education)

"True, provided class is normal, large enough to make comparisons and also that class is properly classified. A class of advanced abnormal students will no doubt be exceptions."

"True. (7) (8) seem to limit stimulation or motivation to the grading end and neglect possible differences in teacher motivation, may these latter differences not be numerous and significant, or that one teacher may stimulate high achievement rewarded by high marks as well as other means? In many cases studied, however, such reasoning is more properly labeled "Rationalizing." (Education and Psychology)

"True, but may it not represent better teaching, or more interest on the part of students?" (Rural Education)

"False. It may indicate a more highly selected group, and most certainly in the case of a very small group." (Mathematics)

"True unless the class is a very small one with high incentives, as for example in a class in which all students enrolled are majors in that subject." (Physical Education)

"True with reservation. Probably true if the marks compared are those assigned for an entire term or semester's work. If they are those obtained from a single test it may merely mean that the test was too easy for the course—that the instruction was better than the testing." (Physics)

"True. This is probably true in a majority of cases, especially if marks are determined largely on a subjective basis. If objective tests are used, and the tests are too easy, the 'A' pupils will not be revealed; so too, many 'average' and 'near average' marks will be assigned, if one does it mathematically. It takes rigid tests to 'scatter' pupils, and reveal the 'A' as well as the 'F' pupils. See Symonds: Measurement in Secondary Education. pp. 513-21." (Psychology)

N. S. T. C. Aberdeen, South Dakota

"Not always. Depends upon type of course."

"The personality of the teacher here is a big factor. Following the curve in marks is not a guarantee of superior teaching." (Meth. Mge.)

"False. I believe this to be true if the groups are large enough. Even then, there are other factors, peculiar to a given situation which may affect grades." (Physics and Chemistry)

"In classes containing a wide range of ability, as in required courses, the statement is true, probably; in elective courses it may not be true." (History)

"True in general, not necessarily."

"False. not necessarily. Many factors enter as determining elements which may distort curve." (Education)

"True. Probably marks in that grade are not significant to the instructor that tests them out." (Accounting, Salesmanship, Bus. Law)

"Depends upon size of group and special training of group."

Teachers College, Columbia University, N. Y.

"False, if one year's students. True if covering several years for each instructor. The main thing is to have *uniformity*. It may skew either way for the whole and still be useful." (Educational Administration)

"True, in general."

"False, meaning not true. The examination might make the difference." (Education)

"High marks may merely indicate an easy test or a test composed of mixed elements, many of which are easy."

K. S. A. C. Manhattan, Kansas

"False if the grades of a class are arranged in the order of excellence the division points chosen for the letter grades to be reported are entirely within the control of the teacher and the reports made indicate nothing positively concerning the difficulty of the course or the rigidity of the standards of the teacher. A teacher with high

standards and high teaching ability may secure accomplishment entirely worthy of high grades." (Chemistry)

M. S. N. C. Ypsilanti, Michigan

"False. An elective class in one's major field rarely has a wide range in scholastic work." (Geography)

"Debatable." (Biology)

"False. Or it may indicate a high degree of selection of students—major interest followed for two, three or four years." (Applied Anatomy, Health Education)

"True unless the students in a certain class happened to be exceptional." (Industrial Arts)

"True. Unusual interest may have been aroused in the subject." (Psychology)

"In freshman curves true. In advanced curves false. I never let a student in an advanced course who is not a "B." (Speech)

"False. The statement is not justified. One might suspect an easier course, etc., but without further evidence a positive conclusion is impossible." (History and Philosophy of Education)

"True. I would say either an 'easier course' or 'a lower standard' or both." (Psychology and Education)

"True. This depends upon whether or not you are dealing with a select group. For example, advanced courses in chemistry are usually elected by a select few. In such cases '7' would be false." (Chemistry)

"Doubtful. Higher marks *may* mean more successful teaching methods—students may have more completely 'reached.' This possible." (English)

"Not necessarily. They may indicate, respectively, good and poor *teaching*, good and poor *motivation*, and good and poor *helping to understand*. Learning is easier under these two conditions; hence high marks are not necessarily an evidence of an easy course, in the sense here intended." (Psychology, Philosophy, and Greek Mythology)

"True. If the numbers are large, this is true." (Geography)

"If courses are different not necessarily true. If the same course by different teachers, the statement is true. (Education)

"False. The high marks may result from a specialized group who have survived the elimination process of a series of prerequisites. The low grades may indicate the reverse." (Chemistry)

"It may be true. Mature students who are interested in a specific subject, may apply themselves so that the results will be grouped." (Principal, Training School)

"False. We have high and low sections and summer classes with a large percentage of mature students; grade standards are different then." (English)

"Probably true in more cases than it is false." **(Speech)**

"False. It might indicate better teaching. By efforts by teacher,

the number of 'A' and 'B' students may often be increased. High marks may mean an easy course or good teaching." (Zoology)

"False. May be a case of high selected students working in a special field of interest and consequently all deserve high marks." (Education)

"False. It may indicate a specializing group in some elective subject." (Industrial Arts)

8. When two distributions of marks are compared, the one having an excesss of low marks indicates a course too difficult or a standard too high in comparison with a distribution approximating a normal probability curve.

	True	False
K. S. T. C. Pittsburg Kansas	40	8
W. S. N. C. Cheney, Washington	35	5
M. S. N. C. Ypsilanti, Michigan	32	14
I. S. T. C. Cedar Falls, Iowa	30	3
N. S. T. C. Aberdeen, South Dakota	7	6
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
M. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston Idaho	1	
Teachers College, Columbia U., N. Y.	2	1
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	1	1
K. S. A. C. Manhattan, Kansas		1
Total	154	39

REMARKS

K. S. T. C. Pittsburg, Kansas

"True if all types of schools or departments are compared." (H. Ec.)

"False. I am not sold on 'the curve' as yet especially in major subjects and *never* in physical education." (Phy. Ed.)

"True according to the conditions you specify but may not be actually true." (History and Social Science)

"True. Sometimes false standards instead of too high standards." (Related Art)

"True. Not in all cases, a small class of majors in the departments should have a greater percent of A's." (Art)

"True."

"Not necessarily. Many factors may be involved." (Education)

"False. Interest and motivation enter here, in general cases it would be true but not infallibly so." (Industrial Arts)

"True. In a class of subnormal intelligence or in a technical sub-

ject low marks may be due to lack of interest or a 'can't' attitude." (Commerce)

"False. I fail to see where it has anything to do with the easiness or the hardness of a course. Easy and snap courses are unworthy offerings and should be confined to the limbo of outworn creeds." (Economics)

W. S. N. S., Cheney, Washington L

"False. If we could get very accurate comparisons maybe true." (Anon.)

"True. Not necessarily true. Take arithmetic, for example. Many students may not have had sufficient preparation for the course or 'it is just naturally hard for me'." (Perhaps I have over-stepped Note 5)

"False. Because the normal probability curve, as in this institution may indicate, as it does, a too high standard." (English)

"True. Assuming that the distributions represent the same subject and the same test." (Education)

"True. Except when students were in antagonism to their teacher, etc." (Education)

I. S. T. C., Cedar Falls, Iowa L

"True. Probably a general truth. However, like No 7 a very difficult test may result in throwing too many into the 'C' rather than into the 'F' and 'D' group. Hence, a large number at 'C' with very few to left and right might mean either easy or difficult tests." **(Psychology,** Tests & Measurements)

"True. Yes, or failure on the part of an instructor to give sufficient drill in points set up for mastery." (English)

"True. With same restriction as in (7). Here of course we have the converse situation." (Physics)

"True in the long run." (History)

"True, assuming that the I. Q. of the group and their average preparation is O. K. and that the teaching is standard." (Physics)

"False. Selection must here also be considered. If calculus were required of every student the number of failures and low grades would prove it too difficult, but limited to those majoring it should appear by the above criterion too easy." (Mathematics)

"True. The student's interest in the course is one of the chief reckoning factors." (History and Principles of Education)

"True. Of a weak selection of students, especially in small classes, or in inter-department or inter-curriculum comparisons." (Department Education and Psychology)

"True, except in unusual cases—perhaps in a mining camp school, factory district school, etc." (Education)

"True. Also opinion." (Psychology and Educational Psychology)

"True, providing the class has mental ability equal to the other with which it is compared." (Psychology)

"True. In general true, but I have had classes that are markedly inferior to others." (Economics and Social Science)

"True of a large number of students. I do not believe it scientific to shift your median to fit a class which happens to be composed of a large number of poor students. I have seen examples where the shifting of the median in classes was distinctly unfair." (Biological Science)

"False. Assuming the capabilities of the teachers were the same, I might think so." (Earth Science)

N. S. T. C. Aberdeen, South Dakota

"True. I contend that this may be considered true in *large* classes." (Methods and Management)

"False. I believe this to be true if the groups be large enough, even then there are other factors peculiar to a given situation which may affect grades." (Physics and Chemistry)

"True. Judgment should not be subordinated completely to secure approximation. Sometimes I wonder if some teachers do not abdicate judgment for the form of science." (History)

"False. Not necessarily. Many factors enter as determining elements, which may distort curve." (Education)

K. S. T. C. Emporia, Kansas

"True unless a class contains an excess of students of low ability." (Psychology)

Teachers College, Columbia University, N. Y.

"True, in general."

"See comment on (7) I'm not sure what you mean." (Psychology)

University of Kansas

"Depends on size of group and special training of group." (Mathematics)

K. S. A. C. Manhattan, Kansas

"A large number of low marks are much more likely to be due to lack of sufficient application than to too great difficulty of the course." (Chemistry)

M. S. N. C. Ypsilanti, Michigan LL

"True. At least too difficult for that particular group." (Geo.)

"True. Unless, for some reason, class interest has not been aroused sufficiently to stimulate effective study." (Psychology)

"False. Depends on the selection of students." (Physics and Astronomy)

"It does not indicate, it only suggests." (History and Philosophy of Education)

"Not necessarily true—nor false." (English)

"The difficulty of the course may be due to poor teaching rather than to subject matter. The too-high standard may be relative to the poor teaching technique employed rather than to requirements in relation to subject matter study." (Psychology, Philosophy, Greek Mythology)

"True. It might indicate a poor teacher also." (Handwriting)

"False. Certain courses as, for instance, prerequisite mathematics

courses may be weeding out courses of Engineering students while another course may be very general or cultural." (Chemistry)

"It may be true or it may show lack of interest, poor teaching, grading, etc." (Principal, Training School)

"True. Not always true but generally so." (English)

"Probably true in more cases than it is false." (Speech)

"False. Depends on students—whether selected and specializing or unselected." (Education)

9. When the distributions of marks of different instructors and different institutions approximate a normal probability curve, it is one index of similar scholarship requirements.

	True	False
K. S. T. C. Pittsburg, Kansas	46	8
W. S. N. S. Cheney, Washington	39	2
M. S. N. C. Ypsilanti, Michigan	32	11
I. S. T. C. Cedar Falls, Iowa	27	7
N. S. T. C. Aberdeen, South Dakota	8	6
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
M. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewison, Idaho	1	
Teachers College, Columbia U., N. Y.	1	2
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	1	2
K. S. A. C. Manhattan, Kansas		1
Total	161	39

REMARKS

K. S. T. C. Pittsburg, Kansas

"Not necessarily true. As between different institutions the higher marks might indicate that the student coming to that institution had higher I. Q.'s or better preparation. We know that such differences occur." (Mathematics)

"It might mean that both were using the 'curve' system." (Phy. Ed.)

"True for freshman classes only."

"True, unless the curve has been so emphasized that instructors deliberately arrange their marks to conform to the curve." (Home Economics)

"False. May have similar ambition."

"False. Pupils have a happy way of accommodating themselves to the requirements of the situation, too. Even teachers temper the wind to the shorn lamb. One head of a department said that his pupils could be expected to do about two thirds of regular university work." (History)

"False. Should say it was a mere accident of occurrence." (Ec.)

"False merely an indication of a similar method of distributing grades." (Geography)

W. S. N. S. Cheney, Washington

"True. If a standard of achievement has been determined." (Anon.)

"True. As departments of education manipulate data it is true." (English)

"True. But there are enough other considerations to vitiate this one." (Education)

I. S. T. C. Cedar Falls, Iowa

"True in general." (Economics and Sociology)

"Not necessarily. The tests in the two institutions may be of different degrees of difficulty. If we assume that the tests are equally searching and equally difficult it would be true." (Education)

"Not necessarily an index of requirements. Marks could be distributed exactly according to the probability curve, yet no work done." (Psychology)

"True, unless they are all following the same mechanical distribution scheme. In such case it merely means 'system'." (Psychology & Educational Psychology)

"True. But a very inaccurate and unreliable index. Anyone with elementary mathematical ability and understanding of the faculty regulations governing distribution of marks can distribute them in exact conformity without meeting his classes at all." (Varied department, Education & Psychology)

"False. An instructor can popularize a course in many ways, require little in the way of scholarship, and yet make his grades conform to a normal probability curve. The same can be true of institutions, and I believe it is true in a substantial number of cases." (Marketing, Advertising, and Retailing)

"True. All the conditions being equal, with normal conditions in all." (Elementary Education Extension)

"False. This is not a case of measurement with fixed units, but rather with India rubber units. If we could be sure the stretch is the same for all distributions or about the same, it would have some value as an index." (Mathematics)

"False. Elementary schools, high schools, colleges may all have similar distributions." (Psychology & Education)

"True. Unless marks are artificially made to conform to such a distribution, regardless of the students' achievements." (Physics)

"False. Not necessarily true, not necessarily false as changed I would make it true." (Elementary school Methods)

"True. Yes, generally one index. I recall two ward schools in same city; their grades at end of 6th grade, promoting to Fr. H. S. showed similar distributions for Reading, Arithmetic, etc. Use of

standardized tests showed one ward two years below other. However, I'm mindful of note 5. (Psy. and Measurements)

"This depends on size of class or whether the classes are all elective or required." (Mathematic)

N. S. T. C. Aberdeen, South Dakota

"False. I wonder whether there is such a thing." (Accounting, Salesmanship and Business Law)

"True. *One* index but the facts may be different." (Meth. & Mgement)

False. I believe this to be true if the groups are large enough. Even then there are other factors peculiar to a given situation which may affect grades."

"False. It merely means that they are following the normal probability curve in determining grades." (History)

"True in general"

"False. The situation merely indicates similar relative distributions which are based on *relative* ranking, not necessarily scholarship." (Education)

Teachers College Columbia University

"Uniformity in distribution, then true." (Educational Adm.)

"False. See Pennsylvania Study."

"It all depends on what form the scores are in whether raw scores etc. and whether same test was used in the several plans." (Psy.)

K. S. A. C. Manhattan, Kansas

"Since any teacher who has arranged the grades for the members of his class in order of excellence may cut them into groups for the reports by letter at any points which he chooses regardless of scholarship requirements, it should be evident the reporting by teachers of groupings of grades supposed to correspond to the normal probability curve will have no bearing whatever upon the scholarship requirements for the course." (Chemistry)

"True. If the marks represent the actual work of students and are not 'doctored' to give a normal distribution."

M. S. N. C. Ypsilanti, Michigan

"Should be for similar institutions, similar instructors, and similar students." (Physics and Astronomy)

"Perhaps 'one index' but a slight one." (History and Philosophy of Education)

"Not necessarily true, even 'in the large.'"

"Not necessarily. Under good or poor teaching, if testing is done by objective methods, the normal curve will be more or less approximated, and with reversal of the quality of teaching, students may shift their relative status under the curve." (Psy., Philosophy, and Greek Mythology)

"It may be true, but it may mean nothing more than a normal distribution within the institution." (Principal, Training School)

"May be true, but very roughly so." (Speech)

"False. For many other factors like personality and ability of teacher; also relative discrimination power of teachers." (Zoology)

"False. Only when marks are derived in same manner." (Education)

10. A distribution of marks by instructors and institutions approximating the normal probability curve, is one index of desirable scholarship requirements.

	True	False
K. S. T. C. Pittsburg, Kansas	45	6
W. S. N. S. Cheney, Washington	37	4
M. S. N. C. Ypsilanti, Michigan	37	10
I. S. T. C. Cedar Falls, Iowa	32	2
N. S. T. C. Aberdeen, South Dakota	9	4
K. S. T. C. Emporia, Kansas	2	
C. S. T. C. Greeley, Colorado	1	
W. S. T. C. Kalamazoo, Michigan	1	
State Normal, Lewiston, Idaho	1	
Teachers College, Columbia U., New York	2	1
University of Cincinnati	1	
University of Wisconsin	1	
University of Kansas	1	2
K. S. A. C. Manhattan, Kansas		1
Total	170	30

REMARKS

K. S. T. C. Pittsburg, Kansas

"True. Distribution of marks depends on other things than standards of scholarship and correct rating, such as ability, preparation and industry of student, college atmosphere, etc." (Mathematics)

"True. An indication only." (Physical Education)

"True. Automatically, there is a process of selection going on the more advanced school work becomes. I am wondering if a distribution of senior college grades, let us say, will present a skewed curve, indicating an apparent excess of A's and B's and too few of the lower grades." (Industrial Arts)

"True for freshmen classes only."

"True unless the curve has been so emphasized that instructors deliberately arrange their marks to conform to the curve." (H. Ec.) Economics)

"True. If a high standard is required it might not approximate the normal curve and would that be undesirable?"

"False. I am not convinced that the accepted normal probability curve is correct after years of weeding out the mentally unfit through twelve years of mental testing." (History)

"True. Some schools have a select group of students other have

subnormal students. Of course either condition invalidates the comparison." (Commerce)

"False. Neither can I perceive the possibility of such a conclusion. I confess that my faith in a 'probability' is at a very low ebb. The actual scholarship of an institution must be determined by the achievement of its graduates in the 'University of Human Activity', not by class or course marks. When a professor examines and grades a set of examination papers or class papers he should lock the 'Normal Probability Curve' in a safety deposit vault and forget absolutely its existence." (Economics)

"False. It is just an index of a similarity in distributing grades"

W. S. N. S. Cheney, Washington

"True. If the 'normal probability curve,' is based on a *high scholarship.*" (English)

"True. But I have reasons for doubting this." (Education)

I. S. T. C. Cedar Falls, Iowa

"True in general. There must be standards and the Normal Probability Curve seems our best guide." (Economics & Sociology)

"True. Not the only one however, and not necessarily an important one." (Education)

"Same as number (9). Not necessarily an index of requirements. Marks could be distributed exactly according to the probability curve, *yet no work done.*" (Psychology)

"True. Depends upon how it is done. Many other factors may keep the distribution from affecting scholarship output." (Psychology and Educational Psychology)

"If combined with direct co-operative efforts of the faculty to improve the instruction and the measurement pari passu with the application of the Caussian Curve concept." (Varied—Dept. of Education and Psychology)

"True except in special work for advanced students, such as advanced Greek, Mathematics, Chemistry. Here a selected group may easily group themselves at the right." (Rural Education)

"True. This is one of the many indices of desirable scholastic requirements." (History and Prin. of Education)

"False. Not proven. Its value as an index seems rather shadowlike than real. Its use as an index will stimulate to better work and might conceivably lead to greater uniformity of practice and future investigation may prove it is a worthy index." (Mathematics)

"True. In a normal situation."

"True. Though such a distribution, in and by itself, I believe to be of little significance." (Physics)

"True. Only with reference to the larger class groups. It is in my opinion in general that the normal probability curve is specially significant only when applied to large lecture-quiz sections." (Physics)

N. S. T. C. Aberdeen, South Dakota

"False. Same as last comment under (9)." (Education)

"False. Same as fourth comment under (9)." (History)

"False. Same as third comment under (9)."

"False. Same as (7)." (Chemistry & Physics)

"True. It is one index although the work may be inferior. Some very good teaching is done by people who do not know about such a curve." (Methods & Management)

"True. I would say more desirable scholarship requirements." (Accounting, Salesmanship, Business Law)

"These questions are so vague, indefinite and general as to be of little value. They will not produce accurate original data. Why apply scientific refinement to such data?" (Education)

"True. for institutions as a whole. The number of classes would be large enough." (Methods & Supervision)

"The normal curve would disclose some tendencies." (Methods & Management)

State Normal Lewiston, Idaho

"I would emphasize a fifth statement to be added to the four you mention in your third paragraph on your first page, namely: (5) The value or trustworthiness of a college professor's answers to these propositions will depend on his knowledge of what has already been done by others in studying the various important questions arising in connection with marking systems as well as the amount of original research made by such college professor." (Education & Psychology)

"We would not consider it satisfactory to settle the question of whether the earth is flat or round by submitting it to the vote of people who are ignorant of geography and astronomy as many college professors are about the known facts of individual differences in general and progress in school in particular. The competence of a professor in his own field does not guarantee competence in that branch of statistical science by which he must largely justify his answers of the ten questions or propositions stated above." (Education & Psychology)

Teachers College Columbia University, N. Y.

"Most of your questions are leading." (Education)

"Uniformity—then true. T. C. gets along well with attempts at uniformity or a surface skewed toward the high marks." (Ed. Adm.)

W. S. T. C. Kalamazoo, Michigan

"I alone, have checked this questionnaire. I am satisfied that the general concensus of opinion among our faculty would be such as to agree that the statements you make are true. There may be exceptions, but not so many I did not feel justified in asking all to fill out the questionnaire." (Research)

C. S. T. C. Greeley, Colorado

"Each statement marked true without comment." (Research)

University of Cincinnatti

"True. I see I have all of them *true*. Is agreement on fundamental policies perhaps your purpose." (Education)

N. S. N. C. Ypsilanti, Michigan

"Not until the 'normal probability curve' as applied to intelligence is more than a hypothesis." (History and Philosophy of Ed.)

"True. All things considered, we may render a statistical 'perhaps.' The normal curve is all too susceptible of use as a screen behind which the teacher may hide and absolve himself from his contribution to the students' success. A study of Heisenberg's principle of Indeterminancy might be of some use here." (Psychology, Philosophy, and Greek Mythology)

"Not necessarily." (Speech)

"False. Depends on how marks were derived and on group of students." (Education)

GENERAL COMMENTS UPON INQUIRY

N. S. N. C. Ypsilanti, Michigan

"I believe a much more accurate and scientific approach to such problems as the one which you project could be obtained by giving a wider range for answers such as true, probably true, debatable, probably false, false. There is too much *finality* in using just the words true and false." (Biology)

"A study of the mathematical meaning of the normal curve will show that it puts the cart before the horse to say that these statements are true. There is some truth in each of them and some falsity. If grades are determined accurately they will (for *large* numbers) follow the curve; but the curve should have *nothing* to do with determining any grade of any student." (Mathematics)

"I strongly suspect any effort either to stress the importance of grades or to reduce them to uniformity. I admit that the *end* is excellent, but it is so difficult of achievement that the attempt will involve a serious ignoring of individual differences, even in the large, and an emphasis on tangible results to the harmful exculsion of a consideration of general, unclassifiable, but very real educational benefits arising from a course. As a teacher of English I naturally find 'objective tests'—whatever that may mean—as highly inadequate. And our American insistence on grades is one with our exalting of degrees, diplomas and other recourses of laziness in appraisal.

An ideal course would have no grades. Until we reach some degree of the ideal, let us use grades flexibly and as only a part of a greater, general appraisal. We have been damned enough by mechanics and measurement—let's look at the *student* for a change. A teacher who can't judge a student except by marks had better sell life insurance.

"I am out of sympathy with your aims." (English)

GENERAL COMMENTS

"If on some numerical basis all of the grades awarded to the students in a certain subject are arranged in numerical order it is a perfectly simple thing for any teacher to cut this group into five that have the relative percentages indicated in your note (3) A's 7%, B's

24%, C's 38%, D's 24%, F's 7%. This can be done with equal ease regardless of the justice or injustice used in assigning the individual grades. Hence conformity to these percentages is in itself no indication whatever concerning care or correctness in grading. The most careless person might be the most punctilious in respect to this superficial conformity.

"In so far as the probability curve has any relation to grading it is the outcome and the result and not a determining force in grading the individual student. It is conceivable that under certain ideal conditions with a sufficiently large group of students, conscientiously and accurately graded, it might be found that the grades awarded followed the probability curve, but in my opinion such an occurrence would be very rare indeed.

"I see no reason for assuming, or expecting, that the grades earned by even a large group of students in a given course shall be found to be distributed in accordance with the symmetrical, bell-shaped probability curve. I think that we have every reason to believe that the curve will be skewed, and that the nature of the skew will vary even if large numbers are involved. In classes of the ordinary size it is almost certain that the distribution of properly awarded grades will not coincide with the probability curve.

"Distribution of the measurements of any characteristic in accordance with the probability curve can occur only in cases where it is possible to measure the characteristic accurately, and when a large number of individuals exhibiting the characteristic are included in the measurements. Such cases are probably illustrated by heights or weights of individuals of the same kind.

"What is the characteristic involved in grading the work of students which may show measured values distributed according to the probability curve? I hold that this *characteristic in respect to any given course is the student's capacity for attainment, or achievement, in that course.* This capacity is a very complex thing in every case and no means are known for measuring it in a single instance. We can only draw inferences concerning the *capacity* for achievement by measurement of achievement. If achievement in thousands of instances be measured we thus accumulate a mass of data the comparability of which depends altogether upon the accuracy of the measurements. But, however accurate the measurements, the achievements actually exhibited and measured are very imperfectly related to the *capacities* for achievement. This is due to the fact that capacities for achievement are not applied to an equal extent in the several cases, and hence the achievements cannot correspond to the capacities for achievement. There is therefore no sufficient reason for believing that properly graded achievement records will exhibit values corresponding to the probability curve, unless all of the students apply their capacities for achievement for an equal length of time. Students who study shorter or longer times than expected belong in other groups.

"What is needed is not attempt to conform to an inapplicable standard curve, but serious attempts to arrive at standards of achievement that may be used by all teachers of the same subject in the same institution, and ultimately in all institutions having similar purposes. With this must go, of course, the use of reliable tests for ascertaining whether the adopted standard of achievement has been attained.

"Having adopted reasonable standards of achievement, and reliable tests for ascertaining achievement, students failing to attain those standards should be awarded failing grades, regardless of any probability curve. Furthermore students attaining high standards of achievement should be awarded high grades regardless of the number. If only a certain number in a class be awarded A's, those nearly as good are discouraged from making efforts that will seem to lead to no recognition. Of what use are all of our offers of honors of various kinds if it is a foregone conclusion for many of them, that there is no chance to raise their grades?"

—Division of General Science, K. S. A. C., Manhattan, Kansas

"We have answered those questions which, in our opinion, have sufficient experimental or theoretical evidence to warrant a definite answer. Any answers given to questions 4, 6, 7, 8, 9, or 10 would not be based on sufficient pertinent data to make them of value.

"Several criticisms might be made of these questions—

"1. There is insufficient evidence to show that in most college groups the true distributions of subject grades conform to the normal curve. It seems likely that many distributions should be slightly skewed —or perhaps more sharply peaked with a narrower range than the normal curve.

"This Normal School has given the Thorndike Test—Part I— for several years. Each of the eighteen distributions available is skewed. The percentage of high ratings is always greater than the corresponding percentage of low ratings.

"2. Two schools might have grades in a given subject conforming to the normal distribution but the mean quality of work might be different. This is probably true in most cases.

"3. It is doubtful if the examinations on which grades are based have equal units of difficulty. Variation in the units of difficulty will affect the distributions obtained.

"4. The questions are so framed that one feels that the answer "true" should be underlined in each case. May this not lead to erroneous replies, especially on the part of those whose knowledge of statistical theory is meager?"—*Bureau of Research, Washington State Normal School.*

RANKING OF STATEMENTS IN "INQUIRY" IN THE ORDER OF APPROVAL

1. Because of the educational and social significance of college marks, it is desirable that instructors give more consideration to methods of securing more accurate marks, and of distributing such in the best way.
2. As far as possible, marks should be determined by objective methods or tests.
3. In a majority of cases, when two distributions are compared, the one determined by the results of objective tests better represents actual achievement.
4. A distribution of marks by instructors and institutions approximating the normal probability curve, is one index of desirable scholarship requirements.
5. As far as possible, marks should represent achievement in subject matter only, excluding estimates of attention, application, and regularity of attendance, etc.
6. In a majority of cases, when two distributions are compared, the one more nearly approximating the normal probability curve better represents actual achievement.
7. When the distributions of marks of different instructors and different institutions approximate a normal probability curve, it is one index of similar scholarship requirements.
8. When two distributions of marks are compared, the one having an excess of low marks indicates a course too difficult or a standard too high in comparison with a distribution approximating a normal curve.
9. Students who know their marks are determined in large measure by objective tests and that these marks are to be distributed with a reasonable consideration of the normal probability curve, will likely excel in scholarship other students of like native ability without such information.
10. When two distributions of marks are compared, the one having an excess of high marks indicates the easier course and a lower standard than the one approximating the normal probability curve.

INSTINCT AND INTELLIGENCE IN ANTS

A Preliminary Investigation

J. A. Glaze, Ph. D.

About two years ago there came from the press of Macmillans a book entitled, "Instinct and Intelligence," written by Major R. W. G. Hingston, for several years a Major in the British Army in the East. Major Hingston spent several years of study of insect life in Mesopotamia and India, and has written a most interesting book about his observations. It has been the subject (or should we say object) of study in several clubs throughout the country, and, as usual, it has provoked everywhere the popular admiration for, and wonder at, the instinctive and intelligent forms of behavior purported to have been discovered in the insect world.

I proposed to experimentally study three types of behavior that the Major observed, using only one species, Pogonomyrmex Occidentalis, a rather large red ant common to the plains of Texas, and the Southwest in general. Experimental work was begun in the fall of 1929, but it was close to the hibernating time, that I deemed it wiser to wait till the following summer. Accordingly, all of the work here reported was done in midsummer of 1930.

The first experiment involved the question of whether or not ants had a method of signaling their fellows when they discovered food that they could not drag nor carry to the nest. The Major stated that Phidole Indica, a small ant common to the plains of India, when given a caterpillar, examines it carefully, attempts to drag it, and being unable to do so, makes haste to the nest and secures help. "Within a few seconds," so goes the account, "a vast army of excited ants come pouring out of the nest gate. They dash over the ground, an immense legion of them, make straight away toward the caterpillar, reach it, surround it with a swarm. A battle ensues. . . . Some hasten back for more re-enforcements." The author goes on to say that the informant ant marked with a spot of paint as he left the discovered insect, does not come out of the nest until he has warned many of his fellows, and they, having gone directly to the insect after emerging from the nest, must have followed olfactory clues left by the ant along his path as he went to inform his fellows. The author does not tell us how many times he tried the experiment, whether any failures or modification occurred, how far the insect was placed from the nest, and so on ad finitum.

I attempted to test this assertion that the ant warning the others left sensory clues of an olfactory nature along the way in the following manner. I used as stimuli grasshoppers, pieces of beefsteak, bread and liver of a size too large for any insect to carry or drag, but which could be moved by a dozen or more ants. I experimented with ten large colonies during midsummer when they were very active indeed. I placed these morsels of food at distances varying from one inch to four feet

away from the nest, marked the first one at times, the first two at others, and as many as the first ten that found it, with white paint that apparent produced no abnormal behavior. Thirty-three experiments were conducted on several different days. Not once did I observe an ant going intelligently from the stimulus to the hole and warning his fellows. Each ant, upon discovering the food, worked as if he were the only one that was concerned, cutting off another load. One case only was observed where the ant went back to the box for food. The other marked ants went in other directions when they came out of their nests. Apparently what we call memory did not persist very long in our species.

A final word. With all due respect to those, like Major Hingston, who see the god-given perfection of instinct and the dawn of intelligence in these little creatures, I must confess I saw precious little to wonder at, unless it was their lack of intelligence. I have not a particle of evidence that they carry out their acts intelligently, nor that they have a crude memory. Many of them did not know the direction of their nests, once they secured a particle of food. They are extremely individualistic. Witness the fact that not an ant notified another of the presence of water, something very important in a dry summer in Texas. They each satisfied themselves at spittle, drinking water or syrup, and went their several ways, in search of food? I think not. They just kept moving, like all life, and if they happened upon food they partook of it and carried a particle to their nests if they could transport it.

That they follow olfactory clues to a limited extent one cannot doubt. I observed that food placed leeward was discovered accidentally, but placed windward of the holes was flocked to at once. A case will illustrate. One day I placed the meat leeward 8 inches and a few happened upon it within two minutes. I shook them off and placed it windward the same distance from the hole. Immediately a score near the hole reared their heads in the air as if scenting something, and made in that direction at once. A stone was in the pathway, and they inspected this carefully, but came on to the meat after failing to discover it near or on the stone. But that they leave a trail of scent from food to the hole or from an enemy to the nest, and that they go for help when food and enemy are encountered, I failed to observe any evidences of.

Much detailed investigation remains to be carried on with these insects, and this should be done in their "natural" environment. It is our hope to test several species of ants with these and other situations in the near future.

BOOK REVIEWS

Randolph, Vance. *The Ozarks: An American Survival of Primitive Society.* New York: Vanguard Press. 1931. pp. X + 310.

Of special interest to the Alumni of K. S. T. C. is the announcement, by the Vanguard Press of New York City, of a new book by Vance Randolph, a K. S. T. C. grad of 1912, familiarly known to these environs as "Spike." The book is "The Ozarks: An American Survival of Primitive Society." It has been given the leading review space in the book-review pages of The Kansas City *Star* and *Journal-Post,* and is being reviewed by New York magazines.

The book is bursting with facts and scholarly lore. If the reader thinks he may be bored on that account, or that the book may prove a dry number therefore, he has a pleasing disappointment before him. The book has humor, surprise, and charm on every page. It is permeated with the author's spirit, and the reader feels the contact with rich personality, scholarly, liberal, tolerant, and humorous.

The residents of the Ozarks went into these mountains several hundred years ago, and have preserved the flavor of the language, customs, superstitions that they had at that time. It is the treatment of these that make up much of the book. Mr. Randolph is an authority on Ozark folk-lore and dialect and balladry. Many of his articles have been published in such magazines as *Journal of American Speech.* Ballad collectors recognize this as a rich field for the discovery of versions of the old English ballads. Mr. Randolph has given both the words and music of many of those he has found. His account of the tactics he has had to use in order to wheedle a ballad out of the reticent hill-billy will be found as engaging as the versions of the ballads themselves. His acquaintance with such collections as those of Dr. Louise Pound make more valuable the records in this chapter.

An attractive chapter is that on the Ozark moonshiner, his methods, his lack of legal ethics, and the cause of his innocent-mindedness. The manner in which the warning sounds from hill-top to hill-top to announce the coming of the sheriff is romantic enough for anyone. Here is the explanation of the cover design—a hill-billy blowing a cow's horn. The chapters on the hill-billy's cabin, his furniture, his social life, his amusements, his religion, his treatment of the sick, his ideas of sanitation—or lack of them—all are interesting chapters. They are more than interesting. They are written from the viewpoint of a mind scientifically and sociologically informed, and a mind that keeps human interest and humor in the foreground.

The book is in an attractive format, contains eleven half-tones made from photographs taken by the author, has comfortably-spaced and lined pages, and the Vanguard Press have thought it worth while to bring it out in a five-dollar edition.

MARGARET E. HAUGHAWOUT

Pixley, Erma, and Frasher, Mary. *Mastery Grammar Guides, Books I and II.* Chicago: D. C. Heath & Co., 1930, Book I, 79 pp.; Book I, 80 pp.

The *Guides,* prepared for study work in the junior high school and for review of grammar in the senior high school, are composed of five units. Each unit emphasizes one phase of grammar and the elements related to that particular phase, for example, the purpose of one unit is to develop skill in recognizing the basic elements of the sentence. Within the unit is drill material on the noun, the adjective, the verb, the adverb—the parts of speech one must know in order to understand the essentials of the sentence. Every unit has been planned so that each child may work at his own rate of speed, or a group may work on the unit as a class activity. In addition are diagnostic and mastery uses. The authors, believing that grammar cannot "function" without knowledge of fundamentals, have included brief, clear, simple discussions of the fundamentals of grammar. A *Teacher's Manual* accompanies the *Guides.*

ULISTA HAWKINS

Ramaker, Nellie D. (Supervisor of English in the Grades, Sheboygan, Wisconsin.) *Language Drill Pads, Numbers I, II, III, IV.* Chicago: D. C. Heath & Co., 1930.

The *Pads,* prepared for use in grades six to nine, contain drills for forming correct habits in the use of pronouns, verbs, adverbs, homonyms, apostrophe, capitalization, dictionary study, mechanics of letter writing.

Tressler, J. C. (Head of the Department of English, Richmond Hill High School, New York City.) *Grammar Minimum Essentials.* Chicago: D. C. Heath & Co., 1931.

Diagnostic practice and mastery tests to be used as a supplement to a high school text book.

The *Teachers Manual* includes keys for the diagnostic and mastery tests.

ULISTA HAWKINS

Keating, M. W. *Comenius.* New York and London: McGraw-Hill Book Company, Inc., 1931. 255 pp.

Brubacher, John S., *Henry Barnard on Education:* McGraw-Hill Book Company, Inc., 1931. 298 pp.

An understanding and appreciation of present-day educational thought can only be gained by a reasonable knowledge of its development. Many educators have shaken their heads in disapproval at the questionable tendency among schools to discredit historical and biographical educational literature as fundamental reading and study for teachers. Such educators will welcome the appearance of such volumes as are listed above.

Comenius after a brief preface is introduced by a succinct account of the great educator's life and writings. The remainder of the book is shortened reprint of the *Great Didactic* by the great Moravian teacher

and writer. The educational novice who reads this contribution will be surprised to find that so many of the things he is told now as desirable in educational practice were voiced some 275 years ago by an educational genius. There is of course chaff mixed among the grain in the *Great Didactic*. Education has stepped along since 1657 but this book has high value still to all interested in the field of education.

Henry Barnard on Education—the title at once gives an inkling of the contents. The first chapter of seventeen pages portrays briefly the "Life and Writings of Henry Barnard." The rest of the book is practically taken up by excerpts from Barnard's educational writings. The chapter headings will indicate the modernity of the topics. Commencing with chapter two the chapter headings are: Public Interest in Education, Its Extension and Stimulation, Sociological Factors Conditioning Education, General Aims of Education, Grading of Schools, Public and Private Schools, Methods of Instruction, The Curriculum, Teachers, Educational Administration. The influence of Barnard in shaping present educational practice in America cannot be measured. It unquestionably has been great. This publication will very likely aid in the continuance of his wholesome influence.

EDGAR MENDENHALL

Bakeless, John, *Magazine Making*. New York. Viking Press. 1931. XI + 325 pp.

A fair insight into all sides of American magazine publication is gained by the reading of *Magazine Making* by John Bakeless. For those who are ignorant but interested, here is laid open to him a vast array of interesting facts as to how magazines are supported, how the staff is organized, the various responsibilities of editor and printer, the relationships of editor and author, the division of the office work into departments, how books have been, should be, and should not be reviewed, how the circulation is made and promoted, how publicity is given the magazine and who does it. There are carefully built tabulated appendices which include information on estimating copy, tables of type, and methods of lay-out. In an early chapter, an aspiring author may find how his manuscript is treated from the time it reaches the office until his return stamps are used.

Not one magazine, nor a few, nor a single set or kind is drawn upon for information. Seemingly the number used for illustration is legion, and magazines of all types are cited. Some of the material has been drawn from the author's experience when he was associated with periodicals, some from observation, some from correspondence with editors and personal acquaintance with them, some from books already written upon related subjects. When he has used facts from other material, he has given meticulous credit in footnotes. He has based the book upon lectures he gave in New York University. He aims, he says, to suggest the problems encountered by publishers, and also to suggest the methods that are now being used for their solution.

The book is written in a very readable style. It is clear, and uses simple, straight-forward English. There is a hearty vigor present in every page which apparently comes from the worlds of illustrations he has at his pen's point for each statement he makes. Any layman interested in current matters and a reader of magazine articles, would find the first eleven chapters good reading. The appended tabulated material will be found valuable reference for the person more technically interested.

The book contains these two very satisfying and desirable points: a good bibliography and a useable index.

MARGARET E. HAUGHAWOUT

Aitchison, Alison E. and Uttley, Marguerite. *North America by Plane and Train.* Illustrated. 398 pages. New York: The Bobbs-Merrill Company, 1931.

This is a book for elementary school children about the industries of North America such as farming, mining, lumbering, trapping and transportation. Each industry is taken up thoroughly as to location, importance, climatic conditions and surface features affecting it, equipment needed and how it is carried on.

The content of the book is divided into seven parts as follows: Part one—United States: The Middle West; Part two—United States The South; Part three—United States: The West; Part four—United States: The Northeast; Part five—Alaska; Part six—Canada; Part seven—tropical North America. There are twenty-nine chapters.

The book is excellent for detailed information. It would not do for recreatory reading, or to a great extent for special reports to be given by children. They would be confused by the number of details. Many figures are often used in one paragraph.

At the end of each chapter are "checks" where children may copy statements and fill in blanks to test their comprehension of the subject matter. This makes the reading appear more definitely work-type.

Very little appeal has been made to the dramatic nature of children. The facts are placed before them. The authors appear to know facts better than they know children. After the three page chapter which introduces the book, there is no connection between the title of the book and the manner in which it is written. Each part of the continent is discussed with very little reference to travel from place to place as the title might lead one to think.

The following paragraph describing the southwestern Texas country shows the amount of detail and the number of figures that are often used:

"The rain can not be depended on. In one year there may be only fifteen inches and the next twenty-one. In one very dry year only eight inches fell; but an occasional wet year of thirty inches brings joy to the hearts of the ranchers. These figures suggest to us the great prob-

lem of the stockmen. In a wet year there may be grass enough on one square mile to feed eighty cattle while in a dry year the same square mile may be able to support only twenty."

GLADYS RINEHART

Hillegas, Milo B. *The Elements of Classroom Supervision.* Chicago and New York: Laidlaw Brothers, 1931. 224 pp.

This book presents the essential features of a suitable organization for classroom supervision. Supervision, one of the most powerful agencies in a school organization, can reach the highest level of efficiency only when the duties and authority of the various staff members are defined and co-ordinated. The principal should be the one responsible for classroom supervision both from the standpoint of theory and practise. He may do the supervising himself, or he may seek the assistance of a general or special supervisor, who should be considered a staff officer working under the authority of the principal.

Although the author has stressed the organization and administration of supervision, he has not lost sight of the psychological aspect of education. The usual conception that supervision is for the purpose of improving instruction is wrong in that it has fixed the attention upon the teacher rather than upon the learner. The real purpose of supervision is to provide better material to be learned and to promote efficient learning.

In addition to discussing the usual techniques and devices for improving teaching and learning, the author has included chapters on *The Nature and Significance of Teacher's Purposes, Development of Appreciations,* and *The Learning Process.*

The book is well written and should prove valuable not only to supervisors and administrators but also to classroom teachers who need to have a general understanding of the functions and techniques of supervision.

ERNEST M. ANDERSON

Charnley, Mitchell V. ed. *Play the Game.* New York: The Viking Press, 1931. VIII + 415 pp.

A book of sports covering the minor and major sports. A collection of articles and interviews by prominent players, coaches, writers and experts.

Baseball in a big league training camp with talks and articles by Grove, Earnshaw, Hornsby, Connie Mack and others giving a glimpse into professional baseball as it is played today.

Football by "All-American" players such as "Red" Grange and Benny Friedman. Articles by prominent coaches, writers, and scouts. Every phase of the game is discussed. Play situations and how they were met by players in actual competition forms an interesting and instructive part of the football discussion.

The importance of the mastery of fundamentals and team play,

the use of offensive and defensive strategy by leading coaches of basketball gives one an insight of this popular game.

Track and field by coaches Moakley, Edmundson, Templeton, and Cromwell; tennis by Cochet and the minor sports by leaders and experts makes this a book easy to read and one that should find favor with sport-lovers of all ages. A help to the layman who desires to know more about our American pastimes.

C. H. MORGAN

SCHOOL GROWTH

Report of Registrar, Kansas State Teachers College, Pittsburg, to State Board of Regents

	Oct. 31 1930	Oct. 30 1931
Full time students	1215	1375
All students served, no duplications	2015	2159

CALENDAR

Second semester enrollment.....January 25, 1932

First summer session enrollment.....May 31, 1932

Second summer session enrollment.....July 30, 1932

For catalogue and special bulletins address,

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