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THE EDUCATIONAL LEADER

COMMERCE and BUSINESS ADMINISTRATION,
LANGUAGE and LITERATURE, and
PHYSICAL SCIENCE NUMBER

Published by the Faculty of the
KANSAS STATE TEACHERS COLLEGE
Pittsburg, Kansas

Vol. 13

MARCH, 1950

No. 2



Central School, at the corner of Fifth and Walnut Streets, one of the Pittsburg City Schools, and the first home of Kansas State Teachers College, from 1903 to 1908, from an old photograph taken about 1904, before curbs, gutters, and fire hydrant were installed, showing the gas-lighted street lamp, and the trees as mere saplings.

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The Educational Leader

WILLIAM T. BAWDEN, Editor

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Published twice a year, in November and March, by the Kansas State Teachers College
of Pittsburg, Kansas

A Project for the Improvement of Instruction

A PROGRESS REPORT

ROBERTSON IRVING STRAWN AND RONALD GIBSON SMITH

INTRODUCTION

We were no more concerned than any of the other faculty members present when, at a general faculty meeting during the spring of 1949, our Dean of Instruction presented a mimeographed list of possible local studies which our faculty might make as a part of a project sponsored by the North Central Association with a view to improving the work of a group of associated teacher training institutions. By routine announcement several weeks later we were informed, along with other members of the faculty, that the topic "Improvement of Instruction" had received the most votes.

The details of the meeting at which the vote was taken are still rather vague to us, even though we have frequently recalled this meeting as the beginning of a project that has since consumed a great deal of our time and energies. It must have been on the first Monday of some month—our faculty meetings are always held on the first Monday of the month—and neither of us can recall more than three items in the list of a dozen or more suggestions which were submitted.

If the project which had its beginning in the choice of the topic "Improvement of Instruction" should become institutionally significant, we will undoubtedly overcome our resistance to the role of historian, and look up the record of this meeting held sometime in the spring of 1949. But, in addition to our aversion to historical research, our enthusiasm for the project is mingled with our serious doubts as to whether anything of a constructive nature will finally emerge from the plans, the mimeographed sheets, and the committee meetings. The details of that meeting in the spring of 1949 may always remain as vague to us as they are now.

THE AUGUST WORKSHOP

Our connection with the project for improving instruction came during the summer of 1949 when we were asked by administrative officials of the college if we would attend the North Central Association Workshop at the University of Minnesota during August and become co-chairmen of a local project for improving instruction. We agreed, attended the workshop, where we accumulated a number

of ideas for improving college instruction, and during the final week of the workshop presented a "Suggested Plan for Improving Instruction at Kansas State Teachers College, Pittsburg."

The plan as we conceived it and presented it to the workshop began with gaining general faculty approval of the plan, organizing voluntary faculty committees for carrying forward phases of the improvement program which seemed to the faculty members to be most profitable in terms of improvement in instruction, and providing for

all committee work to culminate in "recommendations for action" to be presented for consideration at general faculty meetings.

At a faculty meeting preceding the opening of the fall semester, 1949-1950, we presented the "Suggested Plan" as provided for in the first item of the plan. The questions asked, the discussion, and the affirmative vote of the faculty meant that we were under way, Item 1 had been accomplished, and "suggested" was no longer included in the title of the plan.

OUTLINE OF A PLAN FOR IMPROVEMENT OF INSTRUCTION

Kansas State Teachers College, Pittsburg

1949-1950

THE PLAN

1. Faculty Orientation Meeting (to be part of the pre-school meeting of the faculty).

Review of the aspects of the North Central Association Workshop, University of Minnesota, Summer Session, 1949, which relate to improvement of college instruction.

Presentation for acceptance, modification, or rejection, of the "Suggested Plan for Improvement of Instruction, Kansas State Teachers College, Pittsburg, 1949-1950."

2. Group Interviews with Faculty Members (to be completed before the October faculty meeting).

The co-chairmen of the Committee on Improvement of Instruction will hold interviews with all members of the faculty who are interested in the plan for improving instruction. The interview groups will consist of about six faculty members meeting at the noon hour with one of the co-chairmen.

The interviews will be for the purpose of soliciting (1) opinions on ways in which instruction may be improved, (2) suggestions as to

committees which may be useful in promoting the study of the problem of improvement of instruction, and (3) names of members of the faculty who are interested and willing to serve on the suggested committees.

3. Organization of Committees (to be announced at the regular faculty meeting, first Monday in October). The committees will be organized on the basis of the information obtained in the group interviews.

4. Committee Meetings (October to June).

Each committee will provide for its own organization, and set the time and place for its meetings. The first meeting will be called by one of the co-chairmen of the Committee on Improvement of Instruction, one of the co-chairmen being ex officio member of each committee.

The report of each committee will consist of recommendations for action presented at some regular or called faculty meeting. Each recommendation will include the agent suggested for carrying out the action or recommended action.

5. Faculty Action on Committee Recommendations (October to June).

After hearing the report of a committee and discussing the report, the faculty will accept, modify, or reject the recommendations of the committee.

6. Evaluation of Committee Work (at the regular meeting of the faculty in June).

At the June meeting of the faculty each Committee will present an evaluation of the effect of its work on the improvement of instruction at Kansas State Teachers College.

PRELIMINARY CONFERENCES

To carry out the second item in the plan, which was included for securing "grass root" opinions from classroom teachers in regard to various phases of improvement of instruction which might profitably receive committee consideration, ten noon luncheon meetings, one each school day for two weeks, were scheduled at the college cafeteria. The schedule was posted on a bulletin board near the faculty mail boxes, and each faculty member was sent a mimeographed note to the effect that those interested in participating in the second phase of the plan, the group interviews, should sign for one of the scheduled noon luncheons.

One of the co-chairmen met with each luncheon group and served informally as a discussion leader. Each discussion was concerned principally with suggested proposals for improving instruction. Although there was naturally overlapping of the lists of suggestions which came from the groups, each discussion had its individual significance, contributing some sug-

gestions or viewpoints not to be found in other discussions.

Both of us were surprised that there were 41 faculty members who voluntarily participated in these discussion groups. These 41, not counting the co-chairmen, one of whom met with each group, are approximately one-third of the teaching faculty and represent nine of the eleven departments, as well as the library staff and the guidance bureau.

The suggestions for committees formulated by the discussion groups were consolidated and presented to each member of the faculty who participated in the discussions. Each was asked to check the three suggested committees which seemed to be most likely to result in some improvement in instruction. The list of suggested committees follows, together with the number of votes which each received.

Methods of effective instruction.....	16
Student evaluation of instruction....	14
Evaluation of student achievement..	12
Methods of faculty self-improvement,	12
Faculty load	9
Special instructional consideration for superior and inferior students.....	7
Special services	6
Closer coöperation with Junior Col- lege faculties	5
Personnel problems related to faculty morale	5
Physical equipment related to in- struction	5
Audio-visual aids	2
Review of course syllabi	2

ORGANIZING SUBCOMMITTEES

We arbitrarily decided to use the five items which had received the most votes: (1) Student Evaluation of Instruction; (2) Faculty Load; (3) Methods of Effective Instruction; (4) Evaluation of Student Achievement; and (5) Methods of Faculty Self-improvement. In organizing the membership of each of the five committees we deviated slightly from our original plan. We had intended to use the information that we as members of each discussion group had gathered from the discussions for assigning the faculty members who had participated to the committee in which each would be most interested. But the large number of those who participated together with our inability to sense accurately the chief interest of each participant made it desirable for us to appear before the October faculty meeting with a questionnaire requesting all members of the faculty who were interested in serving on one of the committees—whether or not they had participated in the preliminary discussion groups—to indicate their preferences. It was understood that the indicating of a preference would automatically appoint one to that committee, and that failure to indicate a preference would mean that for some reason—which need not be disclosed—one did not care to serve.

Despite the voluntary nature of

the project, 41 members of the faculty offered to serve on some one of the five committees, as follows:

Methods of effective instruction.....	14
Methods of faculty self-improvement,	9
Evaluation of student achievement ..	8
Faculty load	6
Student evaluation of instruction....	4

Ten of those included in the tabulation are faculty members who did not participate in the preliminary discussion groups. Likewise, there are ten who participated in the preliminary discussions who did not at that time indicate willingness to serve on a committee.

A GOAL TO BE REACHED

In terms of the six items of the "Plan for Improvement of Instruction," we are half done—three of the six steps have been completed. But in terms of improving instruction, absolutely nothing has been achieved thus far. It is important that we as co-chairmen remember this, and it is important that the members of the various committees keep in mind that improvement of instruction is not to be measured by faculty organization, or good intentions. To have improved instruction improved instructional procedures must be used by individual faculty members.

We realize that absolute measurements of instruction procedures are practically impossible. But if the present project achieves any measure of success we will have to

produce at least some circumstantial evidence of improved instruction. Whether or not such evidence will be forthcoming will depend on a number of factors.

Those who serve on the various committees must be content to recommend actions that are feasible yet significant in effecting improvement of instruction. There will undoubtedly be numerous committee members who will want to make drastic and revolutionary recommendations. In making such recommendations the danger is limited faculty support or a recommendation that cannot be effected by classroom teachers.

The opposite type of committee member—the one who wants to study a problem indefinitely without making a concrete recommendation—will be just as dangerous to the success of the project. For the project to be successful the committees must work with a keen precision, touching quickly and deftly those points in instructional procedure where there is both need for improvement and a practical method for achieving improvement.

FACTORS OF SUCCESS IN THE PROJECT

Another factor which will affect the success of the project will be the extent to which those faculty members not working on any committee are stimulated by the work and recommendations of the com-

mittees. The success of the project would indeed be limited if it affected only members of the various committees of the project.

Still another factor which will determine the success of the project will be the coöperation of the administrative officials. Although we believe that the improvement of instruction is basically the concern of the teaching members of the faculty—teaching is their profession as surgery is the profession of a surgeon—administrative official can be of immeasurable assistance in a project of this kind. It is not expected, nor even desirable, in our opinion, for administrative officials to play an active part in a project of this nature. However,

some committees attempting to bring about improvement in instruction will, sooner or later, bring in a recommendation which the teaching members of the faculty will be powerless to put into effect without administrative assistance.

The work of the committees, the reaction of the non-members of the committees to the work of the committees, the nature of the assistance given by administrative officials, and the judgment and energy used by us the co-chairmen of the project will determine whether or not it will ever be necessary for us to write a history of this project. Perhaps this progress report will be enough. Perhaps not.

What Is a Communication Course?

JEAN FIELDER MCCOLLEY

All communication courses are organized for the purpose of developing in the student the skills by means of which he may transmit ideas from his mind to that of another person or group of persons. The group of educators who are struggling with this problem believe that the conventional rhetoric courses have not given enough attention to speech as a means of attaining this end. They are also convinced that the other course has not been practical enough for the average person. They agree

that rhetoric is adequate and valuable for some students but question that it meets the needs of the greater number.

All over the country educators believing in these principles are experimenting with the expressed purpose of constructing a course scientifically planned to make clear to the student what the techniques of effective communication are and to provide adequate development of these skills through practice. Although all are generally agreed on the ultimate objectives and pur-

poses, there is much variation in the actual working out of specific plans. Each school offering such a course has a plan in operation which has distinct features of its own.

This lack of uniformity makes impossible a description of the communication course and makes necessary instead an outline of the course as taught in one certain school. Because of this lack of standardization it is advisable as a course develops to clarify its plan and general objectives by defining the logical basis on which it rests.

All agree that the one vital objective of this type of course is self-expression. Conventionalized education has through the centuries grown away from the method of Socrates, which was to allow the student to talk himself into a realization of what an idea means. Instead instruction has tended to give out facts to be memorized. But learning by rote is not education. Education is the assimilation of facts. As the plant takes from the sun and the soil and produces food, so the mind takes from its environment to produce thoughts. The teacher and the school environment are the sun and the soil which enable the mind of the student to grow into a hardy plant.

If this development in the thinking process does not take place as the student learns to talk and to write, there can be no lasting value. In this way a change takes place in the student as he learns. If this is

true, the distinguishing characteristic of this type of course should be the attitude of the student and the teacher. Among the students should be developed a friendly, helpful, and coöperative attitude toward one another, a general understanding of the purpose of the course, and a feeling of responsibility for its progress. The teacher in this plan is merely one of the group sharing in the general discussion. Every individual in a group deserves as much respect and admiration as what he has to offer deserves.

In any group discussion the opinion of any member is judged on its merits. Each person is free to contribute. This must be true of a group studying communication skills. In such a group situation, even though the teacher surrenders his prestige and power to dictate, he should hold an enviable position because of his superior knowledge and judgment. But it seems an inescapable fact that in a course primarily planned to teach techniques of communication, the classroom restrictions should be lowered so that a student feels that what he has to say is important and may have some practical effect. Without such an attitude in class no true communication can take place.

Then if real transfer of thought is to take place, there must be subject matter of such vital interest to the student that he has an honest desire to make the neces-

sary effort to express himself in an exact manner. This subject matter should cut across the student's experience as other general education courses cut across the fields of general human experience and must be organized in large units involving some practical and some research experience. This each teacher must work out for himself because, since a teacher must furnish the initial enthusiasm, he should use material in which he sees a deep value for this purpose. It is even possible to have an inter-class planning committee to help with the day-by-day plans.

Two general fields of investigation for the skills course are possible. The first logical subject is the study and scientific investigation of usage of language. As the student investigates language and its peculiarities, and as he begins to realize that people make their own rules, he can easily be led to listen to what people say, to notice what he reads, and from this evidence to draw conclusions of his own from these observations.

The second subject which should be of vital interest to the student and which will provide much discussion is vocational investigation. A study of vocational fields is closely integrated with communication skills since it accentuates the student's need for ability in self-expression. For example, a student who has decided to be a teacher will be much more interested in developing his ability to

express himself. He will see a definite need for this skill. In an 18-week plan only these two field studies could be introduced because time must be allowed for activities which arise in the course of these discussions and which the students themselves suggest. Infinite possibilities for development arise as the students become interested.

Last for consideration is the primary objective, the acquisition of the communication skills. These skills are listening, reading, speaking, and writing. The fundamental principles of all four are simple and easily learned if the matter is simplified and if the student feels that it is a real situation rather than an artificial one.

The danger in this type of course lies in loading it with facts and subject matter until it becomes again the old type of course—one of memorizing and remembering. It must be kept in mind that both teacher and student are thoroughly indoctrinated with the belief that the teacher is the fount of all knowledge, and that the student has only to listen passively and repeat at the proper time the facts presented and the job is done. Constantly the teacher must remind himself that he is merely a guide, consultant, and inspiration. The student is the focal point and active ingredient in the experiment. This is the vital difference between the old course and the new.

Physical Science in General Education

WILLIAM HENRY MATTHEWS

During World War II and in the postwar period up to and including the present time, colleges and universities have been reexamining their educational programs. Committees have been at work on the problem guided by such reports as that of the Harvard committee, *General Education in a Free Society, A College Program in Action* (Columbia University Press), the President's Commission on *Higher Education for American Democracy*, and other publications, plus exchanges of ideas in published articles, workshops, and regional conferences. These and other influences have in a certain measure been successful in bringing about a nation-wide program, "General Education."

SOME TYPICAL EXAMPLES

While this article is primarily concerned with the role of "Physical Science in General Education," a few paragraphs will be devoted to the major program of which it is one of the most important components. To this end a brief examination of the aims, objectives, and administrative problems in General Education of a few widely scattered colleges and universities may be considered. The following paragraphs are quoted or condensed from *Science in Gen-*

eral Education, edited by Earl J. McGrath.

In the fall of 1948, the University of Wisconsin in the College of Letters and Sciences set up a new sequence of courses—a program of integrated liberal studies embracing:

The Humanities.—Language, literature, philosophy, religion, history, music, and art.

The Sciences.—Biology, chemistry, mathematics, physics, astronomy, geology, geography, and their subdivisions.

The Social Studies.—Anthropology, economics, political science, and sociology.

The program is made up of new courses planned to meet the need of drawing together the contributions of many subjects, and relating them to each other to form a meaningful pattern.

At Iowa State University, the College of Liberal Arts requires each student to complete a one-year, eight-semester-hour course in four areas: natural science, social science, literature, and historical and cultural studies.

The University General College, Boston University, gives a two-year curriculum including material from the following areas—natural sciences, human relations, English and literature, political economy,

and educational and vocational guidance; the aim is fusion within each of the broad fields and integration among them.

Stephens College identifies seven areas of need—communication, physical health, mental health, civic relations, esthetic appreciation.

The University of Kansas City in the College of Liberal Arts offers a group of courses known as foundation courses—English composition and world literature, foundations of art, foundations of philosophy, foundations of physical science, foundations of biological science, foundations of history and government. The philosophy of that university is that persons educated for occupational success and for a personally satisfying life should be well grounded in the basic disciplines of our cultural heritage.

Western Washington College of Education has a program of "General Education" in the first two college years for the rank and file of its students with the aim of developing well-informed clear-thinking individuals who are self-disciplined, capable of forming judgments from adequate information, and having many-sided interests.

Antioch College requires courses classified into five areas:

Communications.—Current reading and writing, mathematics for modern life.

Physical Sciences.—Physical Science I and II, Introduction to earth science.

Life Science.—Introduction to life science, ten credits.

Social Science.—Early man and his civilization; foundations of Western civilization or modern European history, or India, China, Japan; American government or American civilization or principles and problems of government; economic principles and practices or fundamentals of economics.

Humanities.—The arts of man, landmarks of Western literature, and a choice between introduction to philosophy and ethics.

Kansas State Teachers College at Pittsburg requires for the B. A., B. S., and the B. S. in Education a certain minimum of experience in communication skills, the humanities, the natural sciences, and the social sciences. Courses especially designed to meet the general education requirement are introduction to fine arts, general mathematics, general biology, fundamentals of physical science, introduction to social science, introduction to literature, and history of civilization.

The offerings by institutions just described show great similarities, and the same could be said about the programs of Harvard, Princeton, Northwestern, Chicago, Wesleyan, and others; however, investigations show that the course content in the physical sciences is

just as different from institution to institution as their entrance requirements are different. For example, one would not expect to find great similarity between the course content of a university that has fewer than 1,000 students, over 100 faculty members not counting graduate assistants, that requires for admission four years of English, at least a year and one-half of algebra, one year of geometry, three years of one foreign language or two years each of two languages, additional subjects, primarily in laboratory science, mathematics and language plus, and I. Q. that fits into an entrance class-average of 121 (Otis), and that of a college or university that requires nothing more than a high-school diploma as an admission requirement.

PROBLEMS OF THE PROGRAM

Any new worthwhile venture is accompanied by problems, many problems; and the program, "Physical Science in General Education," is no exception to the rule. Some of the problems connected with the program that we read about in magazine articles, and hear about in committee meetings, regional conferences, and elsewhere, are: Teaching techniques, fusion of subject matter in an area, and integration among all areas; such problems of administration as inducing capable people to give a part of their time to the development of the elementary type of course; protecting participating

staff members against loss of prestige from reduced participation in their field of specialization; promoting staff members both in rank and salary on an equitable basis of good teaching as is commonly practiced on the basis of research; acquiring teachers with the well-rounded background to carry out the objectives of the program, and in the case of laboratory courses, the acquiring of adequate demonstration and laboratory equipment in addition to classroom and laboratory space. Methods of evaluating students and staff achievements is a problem that belongs jointly with teaching technique and administration.

AIMS OF PHYSICAL SCIENCE IN THE GENERAL EDUCATION PROGRAM

The following objectives were arrived at after a very careful study of "objectives" as described by various writers on the subject, and from personal experience in teaching the course Fundamentals of Physical Science for the past several years:

- (1) To aid the student in acquiring an adequate understanding of major facts and principles of astronomy, chemistry, geology, and physics; and a clear understanding of the relationship between the study of scientific phenomena in the classroom and the world of nature, that he may build for himself a unified picture of the physical universe as conceived by modern science.

(2) To aid the student in accurate, unbiased critical thinking, and to force him to use his reasoning ability and ingenuity rather than to rely solely upon the accumulation of disconnected facts, the student should be encouraged to think independently and to cultivate confidence in the ability to do so.

(3) To develop certain desirable changes in attitude on the part of the student, such as aiding him in freeing himself from blindness of prejudice and superstition; also to give him an awareness of his creativeness at his own level of attainment.

(4) To clarify for the student the continuing social function of the physical sciences, the impact of scientific development on society, and the readiness of the social order to accept and use scientific findings; also the role of science in modern civilization, and awareness of the problems that may be created and solved by it.

(5) To aid the student in understanding and getting an appreciation of the scientific method, and to acquire practice in its application, especially in dealing with everyday problems of living. To show the student how the scientific attitude and critical thinking have been applied in the discovery of new principles.

(6) To induce the student to use the library, to know important sources of reference material in the physical sciences; to aid him in

reading and discussing intelligently scientific topics of interest to the layman, and to introduce him to literature, periodicals, and other sources of that nature.

(7) Other objectives attained by the experienced teacher in some of his students: the student's post-college self-education in the physical sciences as they may prove to concern him—more intelligent participation as a citizen in the making of public policy, planning the solving of social problems—practical (consumers) application of science—the enjoyment of science as a leisure-time activity—aiding him in adjusting himself to the environment—retaining a lasting curiosity, the desire to know facts, and the continued exercising of critical judgment.

NATURE OF INSTRUCTION

Eric M. Rogers, associate professor of Princeton University, describes a type of physical science course in the general education program, and gives it the name "The Block and Gap Course."¹ In this course, several topics are selected in one science or several, to form a scheme of subject matter with some interconnection, making some kind of framework of science. As I interpret the block-and-gap type of course, the blocks represent the topics to be covered in the course; while the gaps are given to arguments, discussions,

1. *Science Courses in General Education*, Eric M. Rogers.

and in general digesting the material covered by the blocks.

We have previously indicated that course content differs from institution to institution as entrance requirements are different; however, there are other factors that must be considered when the course content is the subject, such as: the general interests of the group enrolled in the course, or the geographical location of the institution. Hence, it is our opinion that it would be folly for one institution to copy another school's program; however, we do favor the block-and-gap type of course to some extent. We are sure that our course content is quite different from that of Princeton University both in blocks and gaps. A brief description of our course follows:

DESCRIPTION OF COURSE

At the beginning of the course, each student is supplied with a mimeographed copy of the aims and objectives of the course just as they are outlined in this article. The aims are briefly discussed, and the group is advised that the first block comprises "Energy Manifested as Light," and "The Sun." The topics covered in this block are: Theories of light, light from heated bodies (discussion on electrons and atoms starts here), wave motion, wave lengths, monochromatic light, white light, longest and shortest wave lengths of light; relationship between wave length, frequency, and speed; laws of re-

flection, the inverse square law, why the inverse square law does not hold for short distances from the tubular type of lamp; electric lamp (history and efficiency); color the electromagnetic spectrum, optical instrument, diffraction-refraction and double refraction; the eye; the size of the sun, its size as compared to some other stars, its distance from the earth; the light year, the corona, chromosphere, photosphere, the temperature of the sun, rotation of the sun (Doppler's principle is introduced here), sun spots, frequency of occurrence of sun spots, frequency of sun spots in terms of tree rings; Fraunhofer lines, continuous spectrum, bright line spectrum, possible sources of the sun's heat with special emphasis on the theory of Einstein.

LABORATORY

We prefer to think of the laboratory work throughout the course as being made up of experiences and experiments; the experiments related to the block described are measurement of the candle power per watt for a clear lamp as compared with the candle power per watt for the same size frosted lamp; the measurement of the index of refraction of water. The experiences have to do with lens combinations, image formation by means of lenses and mirrors, various optical instruments, Newton's rings, the use of optical flats, colors produced by interference of

light — by refraction, diffraction, selective reflection, and transmission, and by passing electricity through low-pressure gasses or vapors. By uses of a variable speed rotator, a slotted disk, and a fluorescent lamp, the student gets some idea of the uses of the stroboscope; he observes the spectrum of at least two elements, the various methods of polarizing light, and a display of fluorescent and phosphorescent materials. The experiences described are a carry-over from the older survey course; they have advantages in making the course more interesting, in making the student more curious, and no doubt give him a greater appreciation of the work of the scientist.

DISCUSSION PERIODS

When a block is completed, each student is supplied with a mimeographed sheet of topics; these topics are used as subjects for class discussion. A date is announced, and on that date the class is divided into two equal discussion groups with a teacher for each section, whose job it is to keep the discussion moving, but not to take much part in the meeting other than as a moderator. The discussion period is usually of two-hours' duration; the teachers confer at the end of the first hour; if it seems advisable to exchange groups, that is done; if it is found that each group has a few students who want to do all the talking, then the two

sections are called together and again arranged into two sections; but this time all the talkative students find themselves in the same section. The moderator of one section sometimes finds it necessary to do a little prodding in order to get the discussion moving properly; but on the whole, the arrangement works out very well and is very popular with the students.

DISCUSSION TOPICS

At the Completion of the Block, "Energy Manifested as Light" and "The sun:"

Theories of light.

Speed of light in various media.

Wave lengths of light.

Relate speed, frequency, and wave length in an equation.

Illumination: History of the electric lamp; efficiency of electric lamps.

The inverse square rule as applied to light from a point source.

The rule "inversely as the distance," for short distances from a tubular lamp.

Refraction and diffraction.

Three types of spectra.

Mirrors and lenses.

Astronomical instruments discussed in the order of importance.

The eye.

Discuss each component of the electromagnetic spectrum as disconnected factual material.

Discuss the electromagnetic spectrum from the viewpoint of connected factual material, and ex-

plain how this method aids in clear critical thinking in explaining the following:

Fluorescence.

Phosphorescence.

The efficiency of the fluorescent lamp as compared with the filament type of lamp.

Why objects absorb light and radiate heat.

A piece of black velvet exposed to sunlight is a machine.

Doppler's principle.

Sunspots.

Fraunhofer lines.

Light years.

Theories related to the possible sources of the sun's heat.

At the completion of each block, the student is supplied with an outline related to it; and during a discussion period there is an attempt made to show how the subject matter of the block is carried over to other areas of the physical sciences, and also its integration among other fields. A search is also made of the material covered to determine the objectives that are attained in part.

The teacher, with the aid of the students, attempts to show the many ways that light fits into the four closely related subjects: chemistry, astronomy, geology, physics. As for the other areas in general education, the students readily see the applications of "light" to biology, the fine arts, and the history of civilization.

In analyzing this block as related to the aims of the course, the stu-

dent finds that he has learned some things about one of the most important subdivisions of physics; he has been introduced to astronomy; he has made his start in building a unified picture of the physical universe as conceived by modern science; an attempt has been made to aid the student in accurate, unbiased thinking, the student has seen something of the scientific attitude, and no doubt he has acquired some appreciation of the scientific method; he has been introduced to important sources of reference material related to "light"; however, the teacher can only hope that the student has acquired the appreciation necessary to read scientific material with a measure of interest and enjoyment.

Other blocks related to physics and those related to astronomy, geology, and chemistry are treated in a fashion similar to that of "Energy Manifested as Light"; while the gaps are given to discussions and in general the digesting of the materials covered in the blocks. Time is given at the completion of each block to the fusion within areas and integration among others and to the analysis of the materials to determine their relationships to the course objectives.

DISCUSSION RELATED TO THE OBJECTIVES OF THE COURSE

The student is encouraged in the exercising of critical judgment. This is a trait that can be acquired, but not until one has gained con-

fidence in his own intellectual capabilities. Many people are able to exercise critical judgment who have little interest and no training in the fields of science; but that fact does not bar the scientist from making his contribution toward the attainment of this desirable objective. He has learned by scientific researches to guess intelligently, and he can aid the student to do so by requiring him to learn facts which by instructor guidance, classroom discussions, textbook and library reading, and finally by laboratory proofs, can be fused into a connected story. The student in his later life will be called upon many times to make decisions; he will enjoy making such decisions only when he can make them with confidence. Many problems and illustrations are used throughout the course with the aim of freeing the student from blindness of prejudice, and again the value of acquiring correct data and its assembly into connected factual material asserts itself in attaining an important objective.

To clarify for the student the continuing social function of the physical sciences, the impact of scientific development on society, and the readiness of the social order to accept and use scientific findings, the historical method is used. By this method science is developed from the beginning, and special attention is given to the part of science in the development of our present civilization. How-

ever, in the course such as we are describing that requires but one semester for completion, we attempt to attain the objective by making use of topics from contemporary science, such as the advancement of organic chemistry during the past thirty years, the development of the radio, television, geophysical methods of locating oil pools, atomic energy; all of them exerting an impact on society, and all of them accepted and used by the social order.

APPRECIATION OF THE SCIENTIFIC METHOD

There is little doubt that the students who satisfactorily complete the course will get an appreciation of the scientific method as the scientist applies it in his field; and we may hope that the student has actually improved in independent scientific thinking as applied to other fields of learning and to his everyday life. In answer to a question contained in a questionnaire, "Evaluation of the Course," directed to three different sections of the course in "Fundamentals of Physical Science," eighty-five percent of the students indicated that the course aids them in correct scientific thinking.

Students' notebook material and classroom discussions convince us that students are using the library, and that they are reading scientific material, especially that directed to the layman.

Dr. G. W. Stewart, professor of

physics, State University of Iowa, under the heading, "Conscious Experience in Creativeness," says in part:²

"This goal can be brought to the fore by a determined effort, particularly if the instructor is one who has himself struggled in a serious creative effort in his graduate study and later in his professional life."

We hope that three of our activities contribute in some measure in the development of some creativeness on the part of the student:

1. Some experiments performed by student or experiences that he encounters during the laboratory period, such as an illumination survey of a room, an acoustical survey of an auditorium, participation in the making of several resins such as phenol formaldehyde and urea formaldehyde plastics material.

2. Using apparatus constructed by staff members or observing the construction of simple laboratory equipment such as the Jolley-type photometer, vacuum tube electroscope, rotating mirror, electrolysis of water apparatus, Tesla coil, conservation of rotational inertia apparatus, the reflectoscope, and others.

3. A study of some easily understood research problems related to industry in this particular area, such as preparing the locally-

mined coal for market by separating the impurities, iron pyrite and shale, from the coal by the gravity method, and by spraying the coal with an emulsion of oil in water to prevent the coal from dusting. The latter method offers a problem in that a suitable low-priced emulsifier has not as yet been discovered.

Tripoli, a rock that has good abrasive properties, is found in this vicinity in fairly large quantities; this material offers several problems of a scientific nature: it sells at times in markets that are at various distances from the quarries for about \$8 per ton; but from the sales price must come the cost of quarrying, drying, and transportation; usually the drying is carried out by storing the material in open-end sheds with the sheds set so that the drying is done by the wind, hence the problem becomes one of weather; are the prevailing winds the best drying winds? Tripoli can be machined or carved into many shapes; but it is chalky and easily broken; and again we have interesting problems of filling the shaped material with hardening and coloring material.

While we have mentioned only two research problems that can be stated and attacked at the group's level of attaining, there are a great many others to which we give attention, such as instruments that can be made from rock salt to be used in infra-red radiation; the polishing of calcite, another local

2. Dr. G. W. Stewart: *Conscious Experience in Creativeness*.

rock, so that its double refracting properties may be made use of; the study of asphalt cemented sand, found just a few miles from our campus at the outcrop of the Bartlesville sand; the study of strip-pit water, and its treatment to make it suitable for various uses; and investigation of the shales below and on top of each coal measure, and comparing these shales from seam to seam.

Dr. Eric M. Rogers, associate professor of physics, Princeton University, has the following to say under a heading, "Creative Work":³

"There is a tendency in modern fact-jammed education to starve students of real creative activity. Many a graduate in science emerges with no memory of creative experience in college. Yet without such experience, civilized man is a dull fellow, and general education has little chance to make him better. . . . Laboratory work can provide real creative work for some. Reading with free choice can give it to others. For others, essays and discussion can provide it; but these should deal with thought-provoking questions rather than routine problems. With our interest turned toward it, we can give each student a sense of creative activity, and we may. They will thereby gain in such things as critical thinking."

3. Dr. Eric M. Rogers; *Creative Work*.

SOME INSTRUCTIONAL ASPECTS OF THE COURSE

Each class meets five days a week. Three single periods are devoted to lectures-discussions, and two double periods are utilized for laboratory-demonstration work. The classroom seats seventy students comfortably; it is well-lighted; it is equipped with a twelve-foot lecture-demonstration table with water, gas, three-phase 100-volts, and three-phase 220-volts alternating current, and 28-volts direct current available. Demonstrations are freely used during the lecture period; charts, specimens, and films are considered indispensable, and field trips are conducted whenever feasible.

Usually, any demonstration material used is left on the lecture table for a day, or until any student who cares for the experience is given an opportunity to use it. The laboratory is adjacent to the lecture room and connected by a door so that students and instructors may pass from one room to the other without entering the corridor. The laboratory contains twelve tables, twenty-four chairs, a large apparatus case with glass doors and locks. A battery charger capable of charging six storage-type batteries, and a 220-volt-28-volt rectifier make up a part of the equipment; water, gas, and the same electrical circuits described for the lecture room are

available. The rooms described were designed for the course, "Fundamentals of Physical Science," and they are being used this semester for the first time. The large apparatus case is under construction; but it should be in use by the time this article goes to press; the case will hold all the apparatus used in the course both for demonstration and laboratory exercises. All the apparatus mentioned is "ear marked" to the course, thus eliminating the problem of carrying apparatus from one laboratory to another.

In this category (Instructional Aspects of the Course), we describe the block related to that component of each science known as geology, since it does not lend itself to laboratory demonstrations and exercises in the same sense as astronomy, chemistry, and physics.

In the treatment of this science, special stress is laid upon the table of geological ages, and the local geology with its relationship to the periods of the table.

Kansas State Teachers College is situated in the lower part of the Pennsylvanian period, in the formation known as the Cherokee shale, with the population of the immediate vicinity located in ten towns along the formation (a part of the Cherokee shale) known as the outcrop of the Weir-Pittsburg coal seam, a formation largely responsible for the settlement of the district and the establishment of most of its industries.

Within a distance of four miles from the college campus, four seams of coal have been or are being mined by the method known to miners as stripping, a method that not only exposes the coal seam for easy study but all the rocks and minerals associated with it. The coal seams were formed under very similar conditions, but on our time scale thousand of years apart; the coal seams are different in their thickness and in many other respects, and so are their rocks and minerals.

To the southeast a few miles the Pennsylvanian has been completely erased by erosion; and the Mississippian formation is clearly exposed, in which the Bartlesville sand outcrops. This formation yields large quantities of oil; not here, but in various fields in Kansas to the west of Pittsburg. Lead, zinc, calcite, dolomite, tripoli, feldspar, and many rocks and minerals quite different from those found in the Pennsylvanian are mined in the Mississippian formation. The Pennsylvanian is overlapped by the Permian with its economic products such as salt, clay shales, building materials, and gypsum. The physical and economic geology of these formations, their common rocks and minerals, and economic products all receive attention in classroom reports, and laboratory study, with maps and survey reports as they are needed; field trips in the most part form the laboratory work of this block.

The student thus gains a fair

idea of this branch of science and a knowledge of the geological formations of one particular locality. Further, he should know the proper procedure for acquiring such information about any other region in which he may become interested.

QUIZZES

A careful study of the aims and types of quizzes used in the physical science comprehensive course in a rather large number of colleges and universities convinces us that we still have a lot to learn in that category.

Those in charge of the course at Colgate University⁴ indicate that it is essential to have the objectives of the quizzes and examination in as close agreement as possible with the basic aims of the course. At Princeton University, they call attention to the fact that examinations and assigned problems set the tone of the course in the minds of both teachers and students; hence questions and problems must be consistent with the aims of the course. Those of Boston University give the example: If factual questions are constantly used, then facts alone will be memorized by the students, and the fundamental aims of the course will be lost. At Western Washington College of Education, they are of the opinion that an examination serves two purposes: They determine a grade for the student, and also serve to

evaluate the outcomes of the course in attaining the objectives. The above paragraphs indicate a great sameness of thought and a study of their quizzes convinces us that they are sincere in trying to do the thing that they advocate.

A study of other programs yields such statements as:

Both short, written answers and essays are quite worth the extra time they take to read.

From time to time, the students are required to write historical essays and solve numerous problems.

Seventy-five to one hundred questions are published a month or more before the examination.

Because of the large number of students enrolled in the course, it is necessary to give machine-graded, objective tests; this type of examination makes us stress facts when the course is designed to stress principles.

Emphasis is placed on scientific interrelations as well as on the place of science in the entire program.

At the Kansas State Teachers College, one of our greatest concerns is the progress of our students; and to make this progress evident to the students, primarily by means of short objective tests which furnish conclusive proof to them that they know something about the subject, and that they are improving their methods of thinking and acquiring a considerable amount of worth-while infor-

4. Review of Science in General Education, edited by Earl J. McGrath.

mation. We give fifteen short quizzes during the semester which are corrected and returned to the student, and he is advised that many of the questions will be used in the three-hour final examination; he is also advised that every examination that has been used in the course is available to him for study at the Porter Library.

A typical quiz follows:

FUNDAMENTALS OF PHYSICAL SCIENCE

Quiz

On the blank space opposite the statement, write:

A—If the statement is true for parallel forces.

B—If the statement is true for concurred forces.

C—If the statement is true for nonconcurrent forces.

- (1) The sums of the forces are equal if the system is in equilibrium.
- (2) The sum of the horizontal forces equals zero and the sum of the vertical forces equal zero if the system of forces is in equilibrium.
- (3) The sum of the moments equals zero if the system is in equilibrium.
- (4) A system of forces in equilibrium need not be made up wholly of parallel and concurrent forces.
- (5) The system of forces is in equilibrium to which graphical methods of solution are readily applied.

In the blank space opposite the item, write:

A—If the statement suggests quantum energy.

B—If the statement suggests potential energy.

C—If the statement suggests the law, "conservation of energy."

D—If the statement suggests kinetic energy.

E—Centrifugal force.

- (1) Energy of motion.
- (2) Weight times a height.
- (3) A wound clock spring.
- (4) A bullet shot from a gun.
- (5) A cream separator.
- (6) A ball thrown upward.
- (7) A ball thrown upward at its highest point.
- (8) A bullet upon striking a target gives up heat energy.
- (9) High-speed electrons stopped by a target in an X-ray tube.
- (10) A banked curve on a highway.
- (11) $\frac{1}{2} MV^2$.
- (12) A hot bearing.
- (13) 778 foot-pounds equals 1 BTU.
- (14) A two-gram bullet with a muzzle velocity of 980 feet per second.

On the blank opposite the item, write:

A—If work is suggested.

B—If true mechanical advantage is suggested.

C—If apparent mechanical advantage is suggested.

E—If power is suggested.

- (1) 778 foot pounds.
- (2) A length divided by a height.

- (3) Force times distance divided by time.
- (4) 8 lbs. times 2 feet.
- (5) 33,000 foot pounds.
- (6) A weight divided by a force.
- (7) 550 foot pounds per second.
- (8) A 50-pound force moving a weight a distance of 12 feet.
- (9) Quarter horse power.
- (10) The number of supporting ropes of a block and tackle.

On the blank space opposite the item, write:

- A—Lever.
- B—An inclined plane.
- C—Screw jack.
- D—Wheel and axle.

- (1) Tinner's shears.
- (2) Very high M. A.
- (c) Highest in efficiency of all simple machines.
- (4) Plank from the ground to a loading dock.
- (5) Very low in efficiency but a very high M. A.
- (6) Windlass.
- (7) Wrecking bar.
- (8) Claw hammer.
- (9) Boat oars.
- (10) Tack puller.

EVALUATION OF COURSE

One week before the end of each semester, every student enrolled in the course, Fundamentals of Physical Science, is supplied with a questionnaire carrying the following heading:

During the years that the course has been offered, constructive criticism from students who have completed the course has in our opinion strengthened it materially; hence we are requesting that the students in the present group give serious study to the following

questions and requests for comment. You will complete the questionnaire; but it is preferred that comment and answers to the questions be typewritten; however, whether the form is completed with typewriter or pen, please do not sign your name to it.

The questionnaire contains seventeen questions related to the aims and objectives of the course, one to determine his thought as to whether a single-science course would have been of more value to him than the integrated course; should more motion pictures be used in the course. The student has used many reference books similar to the text used in the course, and he is given an opportunity to give his opinion as to whether we have made a wise choice of textbook. He is asked to discuss notebook requirements, our method of examining, discussion periods, laboratory assignments, and any comment that he cares to make relative to the course or the type of instruction.

CONCLUSION

The opinions concerning the course expressed by students completing the questionnaire, and the comments of former students are very encouraging; however, student appraisal has influenced us in making some changes, such as making examination questions that have been used in the past available to all students, changing of notebook requirements, and using more audio-visual assignments.

We do not contemplate any radical changes in our methods of evaluating students; but we are aware of the fact that our methods can be improved; and much thought is given to that problem. We are not convinced that the survey course that we gave for many years is all wrong, nor are we much alarmed when critics find some of it in the present offering.

About ninety percent of the students who enroll in the course are training with the thought of making teaching a career; and we are in hopes that our methods and presentation of the course are such that should a student copy any part of them, they will be helpful to him in becoming successful in his chosen profession.

Psychology in Business

WALTER SAMUEL LYERLA

Many times have we heard expressions of persons when referring to another's actions, such as, "He should have used better psychology;" or, "That was good psychology." We all seemed to understand just what was meant by the expression and no one stopped to question the speaker who made the statement. Yet had the speaker been asked just what he meant, more than likely he would have been unable to give a clear concise statement of his meaning. On the other hand, he no doubt, would have felt in his own mind that he had expressed himself well. This leads one to believe that we often use the term psychology without taking the trouble to explain what we mean.

According to the dictionary, *Psychology* is "a science which treats of the mind in any of its aspects"; or "it is the traits, feelings, actions, and attributes collectively of the mind." Some have said that psychology is a study of the mind as it relates to one's behavior. We recognize that psychology has something to do with one's behavior and that behavior is controlled by the mind. Poffenberger says that during the beginning of the twentieth century there has been a shift in the subject matter of psychology from the mind to one's behavior.¹

Since behavior is but the outward expression or manifestation of the mind, interest has increased in behaviorism to the extent that mental reactions are looked upon as instances of behavior. It therefore seems that when someone says that another's psychology is good or is bad, he has in mind his behavior as a result of his thinking instead of theoretical or pure psychology. Apparently he has in mind applied psychology rather than pure psychology. Applied psychology is sometimes designated as popular psychology or common-sense psychology.

There is much need for psychology in business, for it is necessary that a businessman be able to determine the reactions of others to certain stimuli as they effect one in his business relations.

Many businessmen are good psychologists in the modern sense but don't realize it. The businessman would likely attribute his knowledge of how to deal with people to his own good business sense rather than to his knowledge of psychology.

A businessman must know how to get along with people; and to do this, he must not only know what to say and do but how his actions

1. A. T. Poffenberger, *Principles of Applied Psychology*, page 1. D. Appleton Century Co., New York, 1942.

will be taken by those with whom he comes in contact. All persons are different, no two persons reacting in the same way under like circumstances. There are, however, certain red threads of similarity running through the personality of all of us that are identical, and it is from these common likenesses that we must take our departure in dealing with people. To some extent we know how persons will react under all circumstances but further than that we must size up the individual and trust to our judgment as to the manner in which he will respond.

In an employer-employee relationship there is much need for a knowledge of psychology on both sides. How each will react at their initial meeting will depend upon the way in which the appearance of each will affect the other. Each will form some kind of opinion at first glance. This may change, however, as each becomes better acquainted.

The young man or woman who goes out to look for a job, he much more successful if he knows something about psychology. He may not be able to keep his job for other reasons, but his task of securing the job will be made easier if he knows what to say and do at the time he makes application.

To be more specific, when one goes out to look for a job, he should consider carefully how he be dressed, for it is probable that a favorable or an unfavorable im-

pression will be created by the manner in which he is dressed. Cleanliness, neatness, and good color combination are of great importance. Courtesy during the interview is extremely important. Employers are not always courteous; however, this is rare but it is not the employer who is seeking the job. The applicant is more or less inclined to be nervous during the interview, but that is only natural. The interviewer is in his own office behind his own desk and in an environment that is familiar to him, while the applicant is in strange surroundings which may make him ill at ease. Although the interviewer may be doing all he can to make the applicant feel at ease, he is nevertheless observing the attitude and the reactions of the interviewed.

One writer² says that an interview should always do three things; give information to the applicant; secure information from him; and establish a friendly relationship with him. It must not be forgotten that the employer is probably just as eager to secure a good employee as the employee is to secure the job.

Honesty in answering questions should always be observed. The applicant in seeking information should ask his questions in a straight-forward manner. He should make the employer know

2. Ordway Tead and Henry C. Metcalf. *Personnel Administration*, Page 696. McGraw-Hill. 1933.

that he wants the job and that he wants to work for him, but he should never give the impression that he is so anxious for the job that he would do anything or accept any kind of task just to get it. Neither should the applicant play upon the sympathy of the employer. He is not going to hire any person out of sympathy. Unless the employer believes the applicant will make a good worker, he will not employ him.

After the interview is concluded the employer may agree to let the employee know his decision in a day or two. If so, the applicant should thank the employer and leave immediately. While he should not rush out, he should, however, not "hang on" after the interview is ended and thus spoil his chances of getting the job because he does not know how to take his leave.

The person in charge of securing personnel must be a good judge of human nature. In his search for employees in his business, many methods are used, and all forms of tests are employed to secure the right person for the places to be filled. The cost of labor turnover due to improper selection of personnel is great enough to merit serious attention.

Probably the most common means of selecting employees is through observation accompanied by personal interviews. Observation may, of course, be used merely by observing a photograph. This,

however, is very unsatisfactory and is done but rarely. It is said that only about fifty percent of such selections are successful. However, I recall an instance where the representative of a large chain store boasted of his ability to determine a good salesman merely by observation. This is an unusual trait, and if true, represents an exceptional ability not often possessed by anyone.

Very often the first interview is merely a preliminary one in which those who are unacceptable are eliminated. There are, however, other steps which must be taken before an applicant is employed. The employer often does not consider that he has enough information about the applicant to put him on the job just after the first interview; he therefore, as a rule, asks that an application blank be filled out which is studied and evaluated by the employer before going further. In the meantime references given by the applicant may be investigated. Much importance is attached to the recommendations of former employers. If these seem favorable, the applicant may be hired. In many cases tests are given the applicant, consisting of mental or aptitude tests; or, if the job is one requiring considerable physical strength, a physical test may be given.

There is probably no place in business in which psychology is used more than in advertising and selling. Advertising particularly,

has made great strides during the past 75 years. Credit for this progress is, in all probability, due to the study and research which has been made in this respect. The statement often heard that "advertising pays" is true only to the extent that a greater volume of sales is ultimately produced. It has been said that advertising is a means of bringing to the attention of the public the fact that there are various kinds of goods which are for sale, but unless such activities result in sales, the purpose of the advertising is not realized. It is true, however, that much advertising does not bring direct results. Goodwill advertising, for instance, in which there is an attempt to create a wholesome relation between the public and the seller may not produce results immediately.

Frequently advertising is used, outside of its primary purpose—that of making sales of particular brands—to interest the public in the product of some particular industry. It is coöperative to the extent that those who manufacture or produce a product, combine their efforts to further the progress of the entire industry rather than to mention any particular brand. For example the National Kraut Manufacturers Association advertises the health-giving qualities of sauerkraut. Also the American Gas Association, in order to increase the sale of gas throughout the United States put on a campaign of coöperative advertising in

which it showed the damage caused by smoke of other fuels.

Advertising may be classified as occupying three stages: pioneering, competitive, and retentive. In the pioneering stage the advertiser merely introduces a product and tries to show that the reader has a need for such a product which is now available. The advertising is based upon a discovery of some product which has not heretofore been available and for which the public has a need. In the competitive stage the advertiser tries to show that a particular brand is better than another. In this stage the public has accepted the product and buys it as a thing in which there is no doubt of its utility value. Most products which the public is in the habit of buying over a considerable period of time are advertised in this stage. The advertisement of the different names of automobiles is a good illustration of a product advertised in the competitive stage.

In the third stage, which is the retentive, the advertiser is content to sit back and enjoy the fruits of his previous advertising. The purpose of this type of advertising is not so much to create more sales as it is to keep the name of the particular brand before the public. The advertiser feels that the demand for his product is assured and that only intermittent advertising is needed. Not many advertisers, however, feel that they can trust themselves to be in the re-

tentive stage. There is a danger that the advertiser may feel himself secure and he may not realize the changing nature of the public. He may find that his sales are falling off and that a strenuous campaign of competitive advertising is necessary to regain his former position.

Much has been written on the subject of the appeal which advertising makes to the public. Advertising is a silent salesman which must attract the attention of the prospective buyer in some other manner than through personal contact. It must appeal to the prospect in order to create a desire for the product. The seller must therefore know the type of persons who may be interested in the product he has to sell.

If the product is one in which women are the purchasers, one must direct his advertising so that it will appeal to women. He must know their likes and dislikes. This he may know in general. However, he may wish to bring out a new product, and he may not know whether women will be attracted to it or not. It is often necessary to do some research by making certain tests with a representative group of women in order to get their reactions to his product before he launches out on a campaign of advertising. If one is selling a product for men, he must know what appeals to men. The type of advertising which appeals to men may be far different from

that which appeals to women. Men and women are so much alike in their likes and dislikes, however, that much of our advertising can be of a very general nature.

Advertising to be effective must attract the attention of the public. This may be done by sound, by moving objects, by lighting, or by color. Human beings are inherently curious, and knowing this, advertisers often select a medium of advertising that arouses the curiosity of the public. A tick-tack on a store window never fails to bring the curious by the window to see what is making the noise. Electric lights have long been used in advertising, but it takes more now than simple lighting to attract the attention of persons. Lighting must be used with other things such as moving objects, striking color schemes, or massive lighting to be effective. A moving object will attract the attention much more than still objects. A sign hanging so that it moves as the wind blows is often used. Electric lights, blinking off and on, or some product which is represented by moving lights is very effective in attracting attention.

The use of color wherever possible has many advantages. Even signboards which so often are looked upon by the public as obnoxious are often made attractive by the use of color. It has been said that where color is used instead of black and white, the advertising is instrumental in pro-

ducing many more sales. Mail-order houses are now using color in their catalogues to good advantage. In no place has color been more effective than in magazines using a good quality of paper. Artists have become so adept in producing color advertising in magazines, making the articles look so real that the desire to buy has been greatly increased by its use. Who has not been thrilled and had his desire stimulated by looking at the realistic color pictures of flowers in the flower-growers' catalogues? Too much color, however, in a magazine is said to lose its effectiveness. Starch says that a publication can scarcely carry more than fifteen to twenty percent of its space in color without reducing considerably the effect of contrast.³ It does, however, make pictures look more natural than if black and white are used alone.

There is often a resistance to advertising particularly if the same advertising is repeated over and over. To overcome this effect on the reader or listener, advertisers use varied ways to break down this resistance. One such plan is to print calendars with the advertising below a beautiful picture so that when the calendar is not wanted, it, with the printed advertising may be cut off. Sometimes the advertising is very effective if the thing to be advertised is shown only incidentally. One such ad-

vertisement by the Buick Company is recalled, in which was pictured a beautiful rural scene, all in colors. A man, his wife, and two children were enjoying a picnic lunch amid beautiful surroundings. Near by almost hidden by bushes was shown an automobile with only the front visible, but displaying the one word, Buick. No other advertising was present but there was enough to show that the outdoor picnic was made possible by the presence of that particular car.

Advertising has a powerful influence in making sales. It not only gives the public information as to what is for sale but where to buy it. Furthermore it helps persons to make up their minds in the purchase of an article. Consumers are not always clear in their own minds as to just what they want. Whether to buy one thing or another is often a problem. They do not always know that they need a thing until it is brought to their attention by someone who has something to sell.

It has been said that there are five stages through which the mind of a purchaser must pass before he finally can be induced to make a purchase:

First stage—Recognition of a condition (need).

Second stage—Desire.

Third stage—Brand preference.

Fourth stage—Price acceptance.

Fifth stage—Decision to purchase.

3. Daniel Starch, *Principles of Advertising*, page 581. A. W. Shaw Co., Chicago. 1923.

First, the purchaser must recognize a condition, that there is a need for a thing that is offered for sale. He must recognize that if he has something of this kind, certain things can be accomplished or brought about.

In the second stage a desire is created for the article. Many persons arrive at this stage, but never get further. The seller of a wrist watch may show the customer the ease with which he may ascertain the time of day, and the beauty of the watch upon his wrist. A desire is created, but still there may be no decision to purchase.

Third, the seller, upon recognizing the customer's desire, talks about the particular brand or make and its comparison with other makes. The customer may, in this third stage become convinced of the excellent qualities of this make, but the fourth stage—price acceptance—which is the stumbling block in most sales must be dealt with.

Upon the acceptance of the price, the fifth and last step is the decision to purchase.

When one is out to sell a thing, he must make use of his knowledge of human nature. In making an approach to a prospective purchaser, the seller must quickly size up the customer. While we are all much alike, yet the response to a certain approach by one customer may be far different from that of another. A seller may say things to one customer in making a sale that would lose the sale with another. The psychology to be used in making a sale to a customer will depend upon one's ability to size up the customer. To some extent this depends upon one's intuition and native ability. To a larger extent, perhaps, it may be learned through the study of psychology and through its application with the experience of actual selling.

It is difficult to see how a business transaction can be made without the application of some phase of psychology. There are good businessmen who have never studied psychology in school, but surely they have learned to apply the laws of psychology as evidenced by their ability to transact business and get along with people.

The Logistics of Diabetes

HELEN SHIRLEY KELSO CARNEY

Anyone can have diabetes but it takes planning to get somewhere with it. In five years I have been accosted by some demanding problems of transport and supply. The story of my progress in the logistics of diabetes may help another diabetic whose technique is still in the hunt-and-peck stage. Those diabetics whose skill and experience in traveling are greater than mine can read this for a sense of power, and I hope it will be required reading for all inventors.

Undoubtedly the diabetic war correspondent who went to Guadalcanal after being wounded in Europe solved transport problems I've never imagined. I'm sure the diabetic Davis Cup player also has a well-worked-out plan for traveling. However, since most diabetics are unimportant as I am, without sport commissions and the *Saturday Evening Post* to help them keep their insulin cool in August on their two-week vacation, I feel justified in talking about my experiences.

My bag looked like a fix-it shop the first time I went for a week-end trip. I was particularly sensitive about its appearance because I was meeting girls I hadn't seen since graduation. I hid the aluminum measuring cup under a lace-trim-

med slip, put the several cardboard boxes containing needles, hypodermic syringe, and insulin in the stocking pocket, and said to myself in an unconvinced manner that many people have electric irons in suitcases. Carefully I folded my good blue satin robe over all of this confusion and started out of the house feeling as if the situation were well in hand. But Mother called me back, waving the soybean bread. I stuffed it in a wrinkled brown paper sack and pressed it on top of the blue robe and my pride.

That first morning in the hotel should be set to the music of "The Sorcerer's Apprentice," or something worse if you can think of it. Actually, there wasn't water boiling on all the table tops in the room but I remember it that way.

I planned to heat the iron, put hot water, needle, and hypodermic syringe in the aluminum measuring cup, place the cup on the flat surface of the iron until the water boiled three minutes. I don't see yet how it can sound so easy. This was during the war when electric hotplates were not sold everywhere except the post office.

My roommate was inquisitive when the suitcase-laboratory began to unfold. I tried to answer

her kind questions with an indifference it was difficult to pretend before the pressing problem of sterilizing needles and injecting insulin.

When she pointed out the blistering wood on the dresser top I removed the iron to the desk which had a glass to protect it. After the glass cracked we put the Kansas City Telephone Directory under the iron. This made an excellent pad and was only slightly scorched.

There were several ways of putting the cup on the iron to boil the water but the one which worked was to hold the cup on the flat side of the iron with my right hand and keep the iron upside down and level with my left. I tried to tell the left hand what the right hand was doing but burned my thumb anyway.

A watched cup doesn't boil any faster than a watched pot, but finally the instruments were properly sterilized. While I was waiting for the water to cool so I could pick up the syringe and needle I regained the use of my hands.

Betty and Sue were staying down on the second floor, so we stopped at their room on the way to the dining-room. We expected them to be waiting, but Sue was still trying to call her aunt, and Betty couldn't decide which shoes would be most comfortable. I hadn't experienced any insulin reactions at that time so waited patiently for an hour. Eventually I decided that my headache and feeling of unreality were due to lack of food, and then we all hurried to the

dining room. The books state that trembling is an indication of too much insulin, but I've learned to grab candy or orange juice long before then. Now I always eat an orange immediately after taking insulin in a hotel room.

We had no knives so I carried the whole loaf of soy bread into the dining room. I will deviate from the actual logistics of the disease to suggest that the first thing a diabetic or prospective diabetic should look for in a physician is one who believes that one slice of white bread per meal is more easily counted than special diet breads. I tried to saw the stuff with my table knife, and what did not fall on the floor I kept in a little wad to substitute for breakfast toast.

A plastic kit 2" x 4" now transports needles and syringe in sterile tubes, insulin, cotton, and alcohol, which eliminates sterilizing needles in hotels and on trains, and carrying several packages. Before I found the kit I went through an intermediate stage of boiling needles in an electric bottle warmer. This was an improvement over the cup-and-iron period, but remained far behind the present plastic period.

A necessity for any of the boiling methods is some grappling tool for seizing and assembling the instruments after they have been boiled. A doctor gave me a rusted pair of pullers of a kind he usually saved for mechanics. I forget what he called them, but he said their official use was to remove the pla-

centa after birth. They are long, like a pair of shears, and this length makes them more helpful than tweezers. They are so useful I forget the dramatic career they have outlived.

The sterile-needle problem was settled with the kit, and in cool weather nothing else is needed to maintain a journeying diabetic. However, keeping insulin cool in the summer is still a problem. When we went in the car, we left home satisfied with our arrangement. We tied strings around the insulin bottles (by this time I was using a mixture of two kinds of insulin), and suspended them just above the ice in a gallon thermos jug. We had the jug reiced at restaurants.

Our peace was disturbed the morning of the second day when we saw that wax was peeling off the insulin bottles. The insulin bottles have rubber stoppers into which the needle is inserted to fill the syringe. If the bottles become moist the wax which seals this rubber cap into the bottle neck peels off and the rubber cap catapults into space. Then the bottle of insulin must be discarded, for air has reached the insulin.

We were in Amarillo at the time and decided to get some DuPont cement to smear over the rubber caps hoping they would not pop out sometime when we were far from a drug store. While we were in the drug store buying the cement, my husband looked for another way to carry the insulin.

The solution was so obvious that it seems strange we talked to the druggist about ten minutes before thinking of it. We bought an ice bag to hold the insulin bottles and to keep them dry when we put it inside the thermos jug.

Jubilantly, we climbed back in the car and I fished the insulin bottles out of the ice cubes for the last time. I detached the soggy strings happily and laid the bottles on a piece of paper on my lap so I could coat the tops with the cement. Even jelly glasses are hard for me to open but I was too eager to wait for help or read the directions for opening this tube of cement. I squeezed it so hard, (without pricking the hole in the top as directed) that the tube split, spilling cement over my lap and the car seat. I did get the insulin bottle tops properly sealed but that was no particular achievement as nothing in the front seat was untouched.

Although my new slacks were ruined, we felt that the discovery of the ice bag compensated. This remained the perfect plan until I decided to take a trip on a train, which made the gallon thermos jug impractical.

We tried to think of a way I could carry an insulin bottle, keep it cool 24 hours, and take it in an overnight bag without damaging the contents. (In five years I have eliminated the factor of appearance.) We first asked the druggist for a wide-mouthed thermos bottle which could be taken in an over-

night bag. Although I didn't tell my husband, I hoped we would have to buy a gleaming aluminum ice-tub such as *House Beautiful* pictures for wedding presents. But there was no shining ice-tub for sale; in fact, not any sort of wide-mouthed thermos.

Then we decided to use dry ice in a regular pint thermos bottle. The druggist suggested that I would be able to buy dry ice in St. Louis. When we had the dry-ice itinerary worked out in fine detail I went to the creamery to get some. There I learned dry ice would freeze insulin immediately.

About this time I began looking for x , or at least the square root of y . Algebra books always have problems with surface resemblance to this one which can be solved with enough clean white paper and sharp pencils. But I was becoming convinced this was a problem for an endowed chair and a stainless steel laboratory.

At last I saw the Kiddie-Therm. (I wonder if they'd pay anything for a decent name.) It is a silver-colored cardboard cylinder insulated with an inner wall of cardboard and thin metal bottom. It is designed to keep a baby's bottle warm for four hours but promises nothing about keeping things cold. However, it was almost a thermos and had a wide mouth, so we bought it. This time the ice bag held the chipped ice with the insulin bottle shoved on top of the ice bag inside the Kiddie-Therm, where it stayed cool enough.

The objection to this method is that the carton is too small to hold enough chipped ice to last very long. Another is that chipped ice is a misleading thing to ask for on a train. But the objectionable character who followed me out of the diner as I left with my huge bowl of ice soon lost hope and left me quickly when he saw the Kiddie Therm's pink and blue label.

In the logistics of diabetes, insulin is the essential item of supply, but the sugar-urine tester presents elements of difficulty. After much earnest shopping I acquired a cosmetic looking plastic kit which I could drop into my handbag. Naturally the doctor proved that this tester was not accurate and returned me to the old method of mixing eight drops of urine with a teaspoonful of benedict's solution in a test tube, boiling it in a pan of water until the solution changes color.

To be honest, this method has not been as tedious as I feared. In fact, I do it quite without thinking at home. However, I've had some annoying experiences in buying the benedict's solution. The first time I asked the druggist for Benedictine, he told me firmly that even since repeal that sort of thing is not sold in drug stores in Kansas. In order to get benedict's solution I had to tell him its intended use, after all.

Once, I bought some benedict's solution in a small town drug store whose druggist seemed to lack diabetic experience. Of course, his

ignorance did not excuse mine. I decided early in life never to study chemistry and had until that moment considered my lack of information concerning qualitative and quantitative one of the benefits of that decision.

When the druggist brought me both qualitative and quantitative benedict's solution, I was dismayed. I asked his advice but he knew nothing and apparently intended to stay that way. (This is proof that he didn't know much about diabetics, because they are a druggist's gold mine, neither dying nor recovering.) He gave me the bottles that I might read the descriptions on the labels, but they were written in drugese which I don't read rapidly without a dictionary. After studying the labels I bought the quantitative solution.

I noticed when I had it home that it called for other ingredients to run the test—part of these ingredients were described in chemical formula, and others seemed to come from medieval necromancy. With firmness of character I ignored their recipe and used my own. As a result, the color produced didn't match any of my charts and I thought I had an en-

tirely new disease since all my answers were for blue, pea-green, olive-green, and yellow.

Although the logistics of diabetes are tiresome I would not leave you without saying that there are compensations in this area as in any other and that since I have a formula, I don't really envy others their y-stitched operations, first editions, or television sets. It is the formula for determining the proportion of the two kinds of insulin I must use. Actually, it is calculated by the square root of what I read, subtracted from the miles I walk, multiplied by the food I eat, with divisions here and there for anger and sundry assorted emotions. You can see why the doctor used a chart to get the answer. It is a genuine swarthy sea-going chart which makes postal zone, income tax, and logarithm charts seem as easy to read as a calendar. My doctor gazes in silent wonder at its beautiful complications. Sometimes he asks me to admire it too. I'll do that because I'm proud of it, but once when he started to explain it I stopped him. After all, I don't need to understand diabetes, *I have it.*

The National Council of Teachers of English and the Interstate College Affiliate

WALTER PENNINGTON

The organizational meeting of the Interstate College Affiliate of the National Council of Teachers of English held on the campus of Kansas State Teachers College, Pittsburg, on Saturday, October 1, 1949, was, from the viewpoint of an English teacher, an action fraught with such potentialities for good that they cannot all be envisioned yet. But before my enthusiasm for the infant affiliate gets going too strongly, let me pause to say something of the parent organization; then I shall return to the affiliate.

THE NATIONAL COUNCIL

For a few facts about the National Council of Teachers of English, I quote from one of its own publications:

The National Council of Teachers of English is a professional organization of teachers of English at all school levels, from elementary through graduate school. It works through conventions, publications, and committees to increase the effectiveness of the teaching of our language and literature.

Each member of the Council profits both from association with

teachers of English at all levels and also from special coöperation with others teaching at his level.

Each Section elects its own Section (managing) Committee, and the chairmen of these Section Committees are members of the nine-person Executive Committee which has charge of Council affairs between annual conventions.

The Council provides each member with a choice of one of three magazines — *Elementary English*, *The English Journal*, or *College English*. It also permits him to purchase monographs and phonograph records at very heavy discounts.

The Council grew even during the war years and its postwar growth has been very rapid. On July 1, 1949, it had more than 12,000 members.

The foregoing brief statement of facts does not indicate adequately the values that the classroom teacher of English finds in the excellent articles, timely and usable, of the *Journal*, nor does it mention the splendid work covering many years of study and research that has been done by some thirty-six committees. Would you

as an English teacher like to know more about audio-visual aids?; about English in adult education?; about intercultural relations?; international contacts?; the teaching of grammar and usage in American schools? These and many more questions have been considered with care and are constantly being restudied and the findings revised; publications and bibliographies are available.

THE LOCAL ORGANIZATION

The democratic organization of the National Council of Teachers of English encourages the formation of affiliates, of which there are 102. These affiliates are classified: "A," more than 150 members; "B," fifty to 149 members; and "C," twenty-five to forty-nine members. These affiliates elect Council Directors, who, at the annual convention, have voting power and help to direct the policies of the national organization.

The ten colleges of this area, representing three states, formed a Class C Affiliate on October 1, 1949. The values possible of attainment in such an affiliate cannot be overestimated, for we have here the meeting of a group small enough to be a good working unit of people

who have interests and objectives in common. Here a real "grass roots" approach to our common problems is possible.

In a group of this size, all doing college English work, an occasional day together such as the affiliate will offer, will not only enable us to become acquainted with one another much better than we can at the larger State meetings, but will also afford us time to consider both the broad, general questions and also those lesser, and, paradoxically, more important questions which are the bases of the larger ones. When a group of English teachers start asking one another such questions as "What text are you using in the survey course, and why?" "How much formal grammar do you teach in freshman Rhetoric?"; "What do you expect your students to learn by writing a term paper?"—they are on their way toward airing their views and finding some common denominators of agreement, for our objectives are in the main the same, and we have much to learn from one another that will in the end serve the only true purpose of all education—the best learning experience for the student that we as teachers are able to offer in our field.

The Gregg Shorthand System Simplified

EUGENIA HORTENSE SMITH

In the earlier editions of John Robert Gregg's shorthand manuals, long, simple outlines were used. However, at the time the Anniversary Edition was being prepared in 1916, so much emphasis was placed on short cuts for high-speed writing that it was necessary for Mr. Gregg to revamp his system in order to compete with other systems using short, abbreviated outlines, and to satisfy champion writers and court reporters.

At the present time the majority of students learning shorthand expect to use it in carrying on stenographic duties in an office, as a stepping-stone to a secretarial position, or in the teaching profession. Only a minority is trying to set a world's record or to become reporters in the state and federal courts. Therefore the presentation of shorthand in the *Gregg Shorthand Manual Simplified*, by Louis A. Leslie and Charles E. Zoubek, has reverted to the soundness of Mr. Gregg's original and simpler presentation of a "system for the millions."

A fundamental principle in achieving success with students in shorthand is convincing them that they are learning a system of writ-

ing that is not only much faster but also easier than longhand. In other words, the right start depends on the simplicity of teaching. The first shorthand lesson in the *Gregg Shorthand Manual Simplified* begins with the simplest transition from longhand to shorthand ever used—the long **h** and comma for *s*. From this the learner proceeds to a larger comma for *f*, and an immense one for *v*. This easy beginning relates the learner's first written shorthand character to a longhand character that he writes readily and easily.

This presentation of the comma *s* with *f* and *v* also served another useful purpose. Beginners have always tended to confuse the two forms of *s* and to hesitate over which *s* should be used with other letters. Introducing the comma *s* in the same lesson with *f* and *v* fixes this association in the student's mind much better than the memorization of a rule. Immediately following, the student learns *n*, *m*, *t*, *d*, and *o*, in such words as *seed*, *scene*, *sane*, and *soar*, thereby associating the comma *s* before these letters. In Lesson 2 the left *s* is naturally presented with *p* and *b*. Thus the student has mastered in two lessons what once was con-

sidered a very difficult principle—the selection of the correct *s* to use with other letters.

Another improvement in the presentation of the alphabet is the use at first of only the long sounds of the vowels *a*, *e*, *i*, and *o*. These are sounds with which the student is familiar. By teaching words in the word lists, as well as in the connected matter, with the familiar long sound of these vowels, the learning process is further simplified. Later on when the student has become entirely familiar with words using the long vowels, the other sounds are presented.

Many beginners have experienced difficulty in distinguishing between the *o* hook and the *oo* hook. This was probably prompted not only by the similarity of shape but also by their being taught in succeeding lessons in the *Anniversary Edition*. To alleviate this confusion, the *oo* hook is not introduced until Lesson 13 while the *o* hook is taught in Lesson 3.

Along this same line of thought, consider the new way of teaching the diphthongs. In the old manual the four diphthong sounds were given together in Lesson 13. Of course, the beginner experienced great difficulty in trying to distinguish between these four characters, particularly the *u* and *oi*. In the *Simplified Manual*, the *i* is taught in its natural place with the long sounds of vowels, the *oi* in Lesson 10, and the *u* and *ow* in Lesson 19.

Teachers have long recognized that reversing an *a* or an *e* to express *ar* or *er* presented a great handicap to the beginner. Just when he had about mastered the idea of reversing the circle vowel at the beginning and ending of straight strokes, or between straight strokes going in the same direction, he was confronted with another rule—reversing the circle vowel between downward strokes and straightforward strokes, as in *barn*, *period*, *concert*, *convert*. In taking dictation, the beginner necessarily had to analyze the word with *ar* or *er* in it to see if it met any of the specifications necessary for reversing the circle vowel. The *Simplified Manual* has solved this perplexing problem by eliminating the use of the reversed *a* or *e* to express *ar* or *er*.

In addition to being difficult to learn, the analogical word beginnings and endings in the *Anniversary Edition* are composed of many words that are infrequently used; for example, *recluse*, *inclement*, *lithography*, *disputation*. The authors of the new *Manual*, realizing that shorthand is a useful tool and should be taught so as to bring about the maximum utilitarian value, have deleted these uncommonly used words from the word lists or the connected matter. If it becomes necessary to write one, the shorthand writer writes it according to the sounds in the word and not according to some special memorized principle. In connec-

tion with this change, 18 disjoined word beginnings have been eliminated and nine disjoined word endings.

An abundance of appropriate reading and writing material is indispensable in teaching shorthand. In this way the student's interest is held and his shorthand vocabulary rapidly progresses. Beginning with Lesson 3 the learner is given connected matter to read and to write instead of the proverbial word lists. For the most part this material is composed of business letters such as the student may hear when he becomes an employee in an office. Until the completion of the new *Manual*, the beginning student was frequently subjected to a type of reading and dictation material that was in direct contrast to that of modern business usage. In the new text the plates give the learner an opportunity to read shorthand that is boldly and distinctly written and an excellent copy to follow for his own shorthand writing.

The punctuation pointers given with the reading and dictation portion of the lessons help to impress upon the mind of the student simple rules for the use of the comma, semicolon, and others. Even though he has been taught the uses of punctuation marks in previous training in English, associating these marks with his new skill of shorthand is another matter. Having a simple statement in the margin that pertains to the use of the

punctuation mark in the corresponding line makes it easier to punctuate sentences correctly and to make the uses of the marks meaningful.

The consistency with which family groups of words are now written is another simplifying feature. For example, in the *Anniversary Edition* of the *Manual*, each of the three words, *coöperate*, *separate*, and *operate*, embodies a different principle of writing although each ends with the syllable, *rate*. *Operate* is written by the abbreviating principle that the form stops with a diphthong or a strongly accented vowel; *co-operate* involves the principle that the word should be written through the accented syllable if the outline is distinctive; whereas *separate* should be written through the consonant following the accented syllable if writing through the accented syllable does not give a sufficiently distinctive form.

All these rules for abbreviating three similar words increase the memory burden of the learner. Of course, it did give him shorter outlines, but it surely did not make for fluent writing. With the simplified system these three words are written by the sounds heard in each word, with no thought given to memorizing a rule in connection with each. This is only one group of words that shows the improvement in the new *Manual* in the method of writing "word families" consistently, but it serves to show

how many words are now easier to write.

For many years teachers have been advocating that the *rd* at the end of a word should be expressed by raising the end of the *r* in the same way that *ld* is expressed by raising the end of the *l*. The new *Manual* has adopted this suggestion, thereby simplifying the writing of the past tense of many frequently used verbs and words formerly written by the complicated reversing principle.

Formerly there was much confusion in the student's mind about joining or disjoining the *t* to express the past tense. In the *Anniversary Edition*, for example, he learned that the past tense of most brief forms was expressed by a disjoined *t*, only to find that brief forms for *asked* and *forced* showed the *t* joined. Another rule states that the *t* or *d* is disjoined after the primitive verb to express the past tense if it cannot be written easily, as in *labored* and *feared*. Yet he is soon confronted with the past tense form, *felt*, and the *t* is joined. With the present system there is no perplexity or confusion over the rule for forming the past tense. The letter denoting the past tense is joined to all words in which the last sound of the primitive word is written, and disjoined in all others. This same principle is used in joining the suffix *er* to form nouns or the comparative degree of adjectives

from a primitive form; for example, in the word *writer* the *r* is disjoined after *write*, but the *r* is joined in the word *leader*.

The task of memorizing the numerous brief forms in the *Anniversary Edition* resulted in much discouragement and failure on the part of the student. Many of the words were infrequently used; one shorthand word often represented three longhand words; long lists of brief forms were presented at one time. In the *Simplified Manual* the decrease in the number of words represented by brief forms has made considerable reduction in the memory burden; the confusing "triplets" have been eliminated; a smaller number is presented in alternating lessons; and only words of the highest frequency are given in the lists.

Heretofore, dictation to a beginning student was often delayed until he had completed the theory of shorthand. During this time he frequently became uninterested and lost sight of the objectives for studying the course. With the introduction of the basic alphabetic characters in the first few lessons of the new *Manual*, the authors have made it possible for the learner to learn theory early in the course through the connected matter and have practice in taking dictation and in transcribing before the theory is completed.

A Displaced Family—A Language Case Study

JULIA ROSS CHRISTIE

For months we have been reading magazine and newspaper articles about displaced persons and their new environments in the United States. But it was not until the DP's began filtering into our local area that we fully realized what a privilege and a responsibility we Americans really have in relation to these honest, well-deserving, but unfortunate people, who have been driven like animals from home to slavery, poverty, disease, prison, and all sorts of social degradation.

It is only a matter of weeks since Mrs. Thelma Weurdeman called Porter Library of Kansas State Teachers College to seek what help we might be able to offer in teaching the English language to a displaced family that had recently come to her father's farm in Cherokee county. Mr. and Mrs. Karlis Pliuksis and their two sons, Imants, age thirteen, and Karlis, age five, came originally from Latvia, where they spoke the Lettish language—a combination of Russian and German.

The English - Lettish problem was referred to Dr. Robertson I. Strawn, head of the Department of Language and Literature of the College, who recommended Dr. Vaudau P. Pierce, assistant profes-

sor of modern languages. Dr. Pierce twice a student of languages in Europe, immediately took a decided interest in the Pliuksis problem.

We were advised first to furnish the lower-grade readers, to be read aloud in order to determine how much knowledge of the English language the family had. It was learned that Mrs. Pliuksis knows very little English, but that Mr. Pliuksis is able to read the first books very well; and so he was given books on the fourth-grade level. He will soon be ready for further advancement. A younger sister of Mrs. Weurdeman is enrolled in a high-school course in shorthand. The sister practices shorthand by "taking" the stories while Mr. Pliuksis reads his books aloud.

Since many of our words have several meanings, a foreigner has difficulty in learning our language. For example, Mr. Pliuksis stops with such a word as "turkey," which to him means only the name of a foreign country, and not a farmyard fowl. Often the words over which he stumbles cannot be found in his English-Lettish dictionary.

Most of the language difficulties for Imants will be solved in school

at Columbus. Imants had gone five years to school before coming to the United States, and had studied English during three of those five years. Upon entering the Columbus school one week after the opening of school, he was placed in the fifth grade. In six weeks Imants was promoted, not to the sixth, but to the seventh grade, and he is now with his own age group. This young fellow is proving to be quite an artist. Some of his work has already been posted in the principal's office. A favorite pastime of his is woodcarving.

Little Karlis, the five-year-old, is learning words by repetition and imagery as he goes about the farm playing and choring with Mrs. Weurdeman's little sister. He is becoming a regular "Polly the Parrot"—repeating words because he hears them, not always knowing what they mean. Seeing an airplane, the little girl pointed and yelled excitedly, "Airplane!, Airplane!" Little Karlis took up the word and said it over and over again. Later he was heard repeating, "Airplane," and the little girl called attention to the fact by remarking, "He's saying it." Karlis immediately repeated these words, "He's saying it," not understanding that he was talking about himself.

Even though Mrs. Pliuksis, the mother, does not think she has time to learn a new language, Doctor Pierce says we need not be

too concerned, for she is certain to pick up a great deal of English from her studious menfolk.

The Pliuksis family and another DP family were originally sent from Europe consigned to two other American families, who suddenly withdrew their requests. Mrs. Weurdeman's father had previously placed an inquiry with the Lutheran Council at Wichita, with the expectation of taking a DP family early next spring. Very shortly he received a call asking him if he could accept one of these cancelled families. He did. The other family was sent to a farm near Brazilton in Crawford county.

Mr. Pliuksis was a carpenter and draftsman before he was forced to leave his home in Latvia, in 1944, and now at the age of fifty years he is learning to farm. Pliuksis is a very intelligent, ambitious man, who is hungry for every bit of learning he can gain. One thing he cannot understand is how we Americans can stop in the middle of a busy work day and go fishing. After much persuasion he did go fishing with the menfolk on the farm one afternoon—Pliuksis was the only one to catch any fish.

In 1948, the Displaced Persons Act authorized the admittance to the United States of 205,000 displaced persons in the period ending June 30, 1950. Since that time Congress has granted an increase of this figure to 335,000. By the close of September, 1949, 80,000

DP's had been settled in the United States, and others were being processed. Because the "opportunity to sponsor DP's still exists in current quota" at this writing, with many thousands more to be claimed, we recognize that numerous DP families are likely to come to Kansas.

This matter of resettling displaced persons presents an excel-

lent opportunity for colleges to function in the promotion of international understanding. Colleges can aid these people through the departments of languages, elementary education, the libraries, the human relations programs — by furnishing workable materials, personnel, and practical suggestions for overcoming the handicaps of these deserving people.

The Competitive Advantage of the Teachers College as Illustrated by Cooperative Business

KENNETH LYNN HILLIER

In this age of specialization and rapid change there is constant need for evaluation and judgment. Past existence is no excuse and no assurance of future existence. In order to continue existing and to continue growing our college must not only fill a geographical educational need but to some extent it must fill a unique place in this need.

To what extent can we continue to fill the future needs? The answer appears to be this: In many fields we could very easily have what business terms a "competitive advantage." That is, as a teachers college we have characteristics and qualities that are ideally suited to some fields. In these fields, once our abilities are recognized by the public, we are better

able to draw students and better able to place graduates than colleges that do not train teachers. Thus, in these respects we have a "competitive advantage."

What qualities or characteristics distinguish teachers colleges? What training in teachers colleges is special, or, at the risk of overworking the word, unique? In conversation one day, Dr. William A. Black, head of our Department of Education and Psychology, gave what would appear to be an answer, or at least the fundamentals of an answer. In effect he said that all training and all courses in education work toward three main goals:

1. Those dealing with the "nature of the learner."

2. Those dealing with the "learning process"; and

3. Those dealing with the "nature of the society in which learning takes place."

Thus a teacher is trained to understand the individual, to understand the techniques of educating, and to understand the society in which the individual lives and learns. A teacher must be both a leader and a servant, a leader in public thought, and a servant to public needs. Any field demanding people with these special abilities or qualities prefers a teachers college to any other college. We have a "competitive advantage" once people recognize this.

What "competitive advantage" can this offer the business graduate? Are there fields that demand leaders in public thought and also servants to public needs? There are many. For example, one idea of "public needs" leads to the idea of "public administration." Sound public administration is sound business administration; the principles are the same despite the apparent contrasts between corporations and governments.

A corporation ordinarily exists for the profit benefits that accrue to its owners. It receives its charter from the state for some stated objective, usually the handling of some combination of commodities and/or services. A government exists for the welfare of society, a result that can be very remote, in-

tangible, and not easily measured. It provides services for the welfare of society—these services to be rendered efficiently, at the lowest cost. In a society like ours the government can fill these needs only as the people have a need, see this need, and demand its solution. A public administrator must be both a leader and a servant. It appears that the business graduate of a teachers college can have a "competitive advantage" in the field of public administration.

The term, "competitive advantage," implies a much more specific example than the broad, vague field of "public administration." Is there a simple, common example? Is it an example that requires the qualities or characteristics of a leader and a servant?

There is an excellent example in the field of the so-called "consumer coöperative" business, a field that is numerically small, requires sound business management, depends on the needs of the people for its existence, exists only as the people try to answer their needs, and yet yields an influence all out of proportion to its size. Many studies have been made of the "coöperative," so we have reliable information from both public and private sources. It has been "cussed and discussed," but it still continues to exist. In a great many respects it appears to be the modern "ugly duckling" of the business world. There are coöperatives in every field of endeavor;

for example, the Associated Press, or the mutual insurance companies. In this article, however, we restrict ourselves to the field of the "consumer coöperatives." The term, "coöperative" or "co-op," is used in the popular sense, and refers to these "consumer coöperatives" only.

The common consumer coöperative in the United States is a farmers' coöperative which probably grew out of a farmers' marketing co-op. It is actually the purchasing and marketing arm of the farmer's business. It is a capitalistic form of business organization; usually, but not necessarily, incorporated, and subject to the same general laws as any other corporation. An exception to this is the farmer coöperative's tax exemption. This exemption is strictly enforced, for farmers only, as an aid to agriculture and society. However, the restrictions are either so severe or so irritating that most farmer co-ops have voluntarily relinquished their exemption. With no exemption, co-ops are taxed under the same laws as any other corporation.

Since "co-ops" are founded primarily by "average" people attempting to purchase supplies cheaper or to promote the sale of products, the opposition from business competitors has been severe and bitter. The fumbling efforts of these "co-op" people have often seemed futile and directionless, yet they always seemed to continue in

one form or another. One reason for this may be that the average farmer believes firmly that he has as much right and ability to run a business as a business man has to own and run a farm. Another reason could be that the farmer believes he has a right to and can get the same benefits for his products as an automobile manufacturer has, for example, when he acquires a source of steel and sets up retail outlets for his product.

The main reason is probably this: The "average" farmer has a need that he feels he must satisfy. He is not big enough to accomplish his ends alone, so he works with others who also feel a need to accomplish the same end. Sometimes these people are certain of their goals, as a lower-priced fuel, or an organized butter-making plant, or a higher price for wheat. At other times it is a banding together to solve depression problems, or to readjust to technical conditions; then their goals are just vague needs. In all cases, regardless of the desired ends, there is a need and a desire to work together for their own good.

From this need and the desire to work toward a common goal came the modern form of coöperative business organization. Even now, developed as it is, it still lacks definite form; it still fumbles; it is misunderstood by its own members; it is uncertain of its own strength, and only partly conscious of its own weaknesses. It must

have business leadership that is efficient yet patient and helping. A co-op must have a manager who is a leader and yet a servant; he must be a person trained to understand both the individual and his thinking processes, and society and its peculiarities. In this field the business graduate of a teachers college could have a "competitive advantage."

How real is this "need" mentioned above? What does the "consumer coöperative" hope to accomplish? Are its goals real and worthwhile? Are its problems capable of being solved? These questions most likely never will be answered to everyone's satisfaction. However, we do have trends, tendencies, and statistics that indicate that these questions are in the actual process of being answered. Regardless of the final outcome, problems exist now that demand a rare type of leadership that combines the ability to lead thinking in business terms and yet be a servant to the needs of the people.

Raymond W. Miller and A. Ladru Jensen, in an article on "Failures of Farmers' Coöperatives," classified co-op failures, and give the percent distribution, as follows:¹

Difficulties in the field of management	19.8
Difficulties in the field of membership	19.7

1. Raymond W. Miller and A. Ladru Jensen. "Failures of Farmers Coöperatives," *Harvard Business Review*, Volume 25, (Winter, 1947), pp. 213-226.

Natural or unavoidable causes (fire, crop failures, and the like)	10.9
Insufficient business for efficient operation	10.3
Financing and credit difficulties ...	9.6
Transportation problems	9.1
Opposition from competing enterprises	8.9
Declining prices	5.4
All others	6.3

The authors discussed the problem under seven main headings:

1. Failure to fill a vital economic need.
2. Lack of education necessary to create understanding and favorable attitudes of members.
3. Financial difficulties.
4. Defects in legal organization.
5. Incompetent management and personnel.
6. Improper operating methods and policies; and
7. Miscellaneous deterrent factors.

It will be noticed that difficulties in the fields of management and membership accounted for about forty percent of all co-op failures. Here one can very easily note that a co-op manager must not only be a business manager, but also a leader of opinions. He must understand business and also understand the people who are its members. This is further evidenced by the "seven main headings" the authors used in the discussion. The first six of these problems could very easily be solved by a good business manager who is also a trained leader in thought and a skilled

servant to member needs. In other words, the business graduate of a teachers college would have a competitive advantage if co-op members ever realized their unusual managerial need.

Dr. O. Ulrey in the Department of Agricultural Economics, Michigan State College, Lansing, Mich., has this to say about the results of a survey taken at Michigan State College: ²

"In general, this survey showed that the coöperative officials, teachers, and students believe that top management of American farm coöperatives should have a broad training in the fields listed below, and they can get this training by taking the courses listed immediately thereafter:

1. In business principles—Business Management, Marketing, Salesmanship, Accounting, Credit, Business Law, Advertising.

2. In coöperative principles—Coöperation.

3. In human relations—Public Relations, Psychology, Sociology,

4. In economic and political principles and policies—General

Economics, Prices, National Policies, Political Science, Money and Banking.

5. In communication principles and techniques—Public Speaking, English, Journalism.

6. In practical agriculture—Agricultural Production courses.

7. In basic principles of physical and biological sciences.

The college student thus faces a real challenge in order to be ready and trained for coöperative employment. He has only started when his job with the coöperative begins. A few months or years of practical experience are then necessary to determine whether he has the "stuff" essential for the top positions. A quick glance back through that list will show that not only do teachers colleges teach all the courses "required," but that their whole educational system is slanted to an understanding of the individual and of the group as potential leaders and servants. If the specific need is ever recognized, the business departments of teachers colleges do have a "competitive advantage;" they can and do give *all* the background necessary for top management.

2. Ulrey. "Future Leaders Need Training in Many Fields," *News For Farmer Coöperatives*, Lansing, Mich., September, 1949, p. 16.

Campus Activities

CONTEMPORARY AMERICAN FICTION

A radio-assisted home-study course in Contemporary American Fiction was conducted by the Extension Division and the Department of Language and Literature of Kansas State Teachers College from September 25, 1949, to January 29, 1950, in cooperation with the National Broadcasting Company and Radio Station KOAM, Pittsburg. The course consisted of lesson outlines for sixteen books, and was offered to both credit and noncredit students. The student was expected to read and submit written reports on six books for two semester hours of college credit, or nine books for three hours credit. A dramatization of one book each week was broadcast over the NBC network, University Theater of the Air, Sundays, 1:00-2:00 p. m., CST.

Both credit and noncredit students who completed the assignments, submitted written reports on at least nine of the sixteen books, and met other stated requirements, were eligible to compete for a prize consisting of a twenty-four-volume set of *The Encyclopedia Britannica*, which was awarded to the student enrolled in the home-study course who, in the

opinion of an impartial board of judges, made the most satisfactory performance.

VISITING PROFESSOR

During the academic year 1948-1949, Kansas State Teachers College enjoyed the services of Ulf Oestergaard, visiting professor of language and social science. He is a graduate of the University of Copenhagen, Denmark, with the equivalent of American degrees of AB and AM. He won distinction in Denmark as author, translator, lecturer, radio commenator, and conductor of university study tours.

Visiting professor for the academic year 1949-1950 is Tai Chen-hwa, of Peiping, China, who will offer courses in Chinese and oriental literature in the department of language and literature; Chinese history in the department of social science; and Asiatic culture in the department of education and psychology. He is a graduate of Teachers College, Columbia University, New York, where he earned the MA degree. He is also a graduate of the Chinese University, Peiping, with the AB degree. He served for two years as member of the staff of the Chinese ministry

of education, and was principal of a Chinese high school in India. Before coming to the United States he was a lecturer at the University of London.

BRAHMS' REQUIEM

One of the notable musical events of the past year was the performance of Johannes Brahms' masterpiece, *Ein Deutes Requiem*, Sunday afternoon, March 20, 1949, by the College music department, Otis J. Mumaw conducting, assisted by John MacDonald, baritone, and Maud Nosler, soprano, of Chicago.

CITY COMMISSION

At the regular fall election held on November 2, 1948, the citizens of Pittsburg by a substantial majority voted to adopt the commission-city-manager form of government. At the spring election held on April 5, 1949, Robert William Hart, professor of mathematics and director of the College Placement Bureau, was elected member of the five-man commission, to which was entrusted the responsibility of selecting the city manager and installing the new form of government.

SPEECH CONTEST

On Saturday, March 26, 1949, the annual Kansas State High School Speech and Drama District Elimination Contest was held at the College, under the sponsorship of the Speech Division of the De-

partment of Language and Literature. Nineteen high schools were represented, and the contests included: one-act plays, humorous readings, dramatic reading, standard oration, original oration, extempore speaking, poetry reading, newscasting, and commercial continuity.

MUSICAL FESTIVAL

The annual district Music Festival, combining Classes AA, A, and B, was held at Kansas State Teachers College, Pittsburg, Friday and Saturday, April 1, 2, 1949, with an attendance of more than 2,700 high-school students from 44 schools of the Tri-State Area. The program provided for 475 different events during the two days.

GREAT BOOKS SERIES

Increasing interest is shown in the Great Books Reading Program, sponsored by the Department of Language and Literature, and designed to stimulate interest in the literary works of our cultural tradition. The series for the academic year 1948-1949 included:

Thursday, November 11. — Plato's *Republic*, by Dean Norman N. Royall, Jr., University of Kansas City, Kansas City, Mo.

Thursday, December 9. — Thoreau's *Walden*, by Dr. Robertson I. Strawn, head of the Department of Language and Literature, Kansas State Teachers College.

Thursday, February 10. — Emily Dickinson's *Collected Poems*, by

Dr. T. V. Smith, Syracuse University, Syracuse, N. Y.

Thursday, March 10.—Machia-velli's *The Prince*, by Rabbi Samuel S. Mayerberg, Kansas City, Mo.

STRING FESTIVAL

The second annual String Festival was held at Kansas State Teachers College on Thursday, March 3, 1949, with more than 150 musicians from eleven high schools in the district participating in class instruction and rehearsals during the day. The evening program consisted of several numbers by the 200-piece symphony orchestra as well as several smaller ensembles. A special number was contributed by Joseph Harding, former concertmaster of the Kansas City Philharmonic Symphony Orchestra, who played two movements of Mendelssohn's Violin Concerto, accompanied on the piano by Markwood Holmes. Conducting were Otis J. Mumaw, head of the Department of Music at the College, Charles Minelli, director of the College bands, and Markwood Holmes, instructor of violin and piano and conductor of the string ensemble.

NEW APPOINTMENTS

Following is a list of new appointments effective September 1, 1949, or at the opening of the Summer Session, June 1, 1949. Brief biographical sketches will appear in Vol. 14, No. 1, November, 1950.

ORLAND EUGENE AKERS, EdM, Chief, U. S. Veterans Administration Guidance Center.

HULDA MAE BERG, MS in LS, Laboratory School Librarian.

EVELYNNE CEDERLUND, MA, Instructor of Home Economics.

DUDLEY TAYLOR CORNISH, PhD, Assistant Professor of Social Science.

MILBURN JOHN LITTLE, MS, Assistant Professor of Commerce and Business Administration.

CLARENCE HOWARD LUNDQUEST, MS, Assistant Professor of Commerce and Business Administration.

JEAN FIELDER MCCOLLEY, AM, Assistant Professor of Language and Literature.

JOSEPH POWELL MURPHY, Assistant in Physical Education.

VAUDAU PETER PIERCE, AM, Assistant Professor of Language and Literature.

ROBERT JULIUS SCHOTT, BMus, Instructor of Woodwind Instruments.

LEONARD EDWIN SCOTT, MS., Instructor of Commerce and Business Administration.

CARNIE HORTON SMITH, MA, Assistant Professor of Physical Education and Athletic Coach.

TAI CHEN-HWA, MA, Visiting Professor from Peiping, China, Department of Language and Literature.

Comments on Books

Counselor Competencies in Analysis of the Individual

One of a series of Committee Reports on Counselor preparation

Published by the Federal Security Agency, U. S. Office of Education, Division of Vocational Education, Washington 25, D. C. Paper, 31 pages, July, 1949.

During the past few years considerable emphasis has been given to the improvement of programs in counselor preparation. Through the initiative of the Occupational Information and Guidance Service and the Division of Higher Education of the United States Office of Education, eight committees were appointed to work on the problem. Each committee attacked a different phase of the over-all problem.

This bulletin is a report of the committee dealing with the analysis of the individual. It functioned under the leadership of Dr. Ralph C. Bedell, professor of educational psychology and measurement, University of Nebraska. The purpose of the committee seems to have been the establishment of a pattern to be used as a guide by institutions in the development of training programs. As a result of its work the committee arrived at a number of general conclusions:

1. It seems quite possible that courses dealing directly with the problem of individual analysis may be advisable. In the past fragmentary courses dealing with narrower areas, such as statistics, intelligence testing, and achievement testing, have in some cases been substituted for the more comprehensive attack which the committee thinks is needed.

2. Certainly there will be a need for a better balance among the various areas of emphasis to be dealt with in the study of individual analysis. Institutions should be very careful to guard against the attitude that some counselors in preparation develop as a result of taking one or two courses of a fragmentary nature. Furthermore, the committee recommends that additional emphasis be given to attaining and maintaining balance within various courses. For example, so-called general courses in Tests and Measurements should deal with the study of standardized tests for a number of areas, rather than placing so much emphasis upon one or two areas, such as general aptitude or achievement.

3. More attention needs to be given to the interpretation of techniques used. This emphasis upon

interpretation should deal with the interpretation of data collected by the use of various methods, both from the standpoint of environmental content and as a single item of information.

4. Institutions must give considerable attention to the development of basic skills of a general nature; but, in addition, each institution should consider the development of a program that has been planned to fit local needs.

Following these general recommendations, the committee attacked the problem directly by naming, describing, and interpreting the competencies needed by a counselor in order to do a reasonable job of individual analysis. The competencies listed by the committee are:

1. To know what individual data are likely to be pertinent.

2. To be proficient in the use of tools and techniques for obtaining individual data.

3. To appreciate the importance of individuals and their problems.

4. To be able to organize individual data in terms of patterns of behavior and development.

5. To be able to relate data concerning the individual to the structure and dynamics of his cultural environment.

6. To be able to interpret data concerning an individual in terms of his occupational, educational, and developmental opportunities.

7. To be able to interpret the

relationship between data concerning an individual and the aims and objectives of the school.

8. To be proficient in the techniques for recording and maintaining data.

Each of these areas of competency in the over-all problems of preparing counselors for the very important job of helping an individual learn to know himself is discussed in this report on the basis of logical subdivisions. This bulletin provides institutions with a very worth-while guide for the development of more formal programs. The attack on the problem of counselor preparation, as indicated by this bulletin and others of the original eight committees appointed by the Office of Education, may well be a landmark in the development of coordinated counselor training programs.

As a result of the emphasis given to the various areas of competency, many of the difficulties encountered in the past in the transfer of credits for certification of counselors should be alleviated. Furthermore, the tendency for some of us to overemphasize certain specific courses should be minimized.

—EMERY G. KENNEDY.

Counselor Competencies in Counseling Techniques

One of a series of Committee Reports on Counselor Preparation

Published by the Federal Security Agency, U. S. Office of Education, Division of Vocational Education, Washing-

ton 25, D. C. Paper, 21 pages, July, 1949.

This is another in a series of committee reports on counselor preparation sponsored by the United States Office of Education. The chairman of the Committee on Counselor Competencies in Counseling Techniques is Stanley R. Ostrum, State Supervisor of Guidance Services, State Department of Public Instruction, Dover, Del.

The objective of the committee was to outline the competencies in the techniques of counseling needed for reasonable proficiency. The committee agreed upon the following competencies as necessary in this area:

1. Initiating counseling.
2. Interpreting individual inventory data.
3. Interviewing.
4. Using school and community resources.
5. Facilitating progress and continuity in counseling.
6. Terminating counseling.
7. Evaluating counseling.
8. Maintaining contact with professional developments in counseling and related fields.

Like the other reports in this series the suggestions offered appear to be very practical and usable. The suggestions should be of particular value to teachers and others who contemplate training to obtain proficiency as counselors. They should be of value also to institutions of higher education in

which the establishment of counselor training programs is contemplated.—EMERY G. KENNEDY.

Methods of Teaching Business Subjects

By HERBERT A. TONNE, ESTELLE L. POPHAM, and M. HERBERT FREEMAN

Published by Gregg Publishing Company, 270 Madison Avenue, New York 16, N. Y., 1949; 446 pages; Price, \$3.50.

The latest book off the press in business education is *Methods of Teaching Business Subjects*, by Tonne, Popham, and Freeman. It is a practical, down-to-earth treatise that proceeds to explain the "how" in teaching the various business subjects, and provides tested techniques for more effective teaching.

For the beginning teacher just starting his career it may well serve as a guidebook and source for teaching suggestions. Those already in the field will find it useful as a criterion for evaluating their own teaching procedures, and in it they will undoubtedly discover suggestions for improving instruction.

At the outset the reader becomes acquainted with the development of business education, its present position, and its relationship to the general education pattern. Immediately following this orientation the authors move into a discussion of effective procedures for teaching the business subjects. They not only emphasize the im-

portance of good classroom organization but also explain the routine that may be set up to aid in attaining this objective.

In discussing basic skill-building procedures, the use of the Mastery Formula is pointed out as being fundamental for the skills teacher. This formula embodies: pretest, teach, test the result, adapt procedure, teach, test again, and continue to the point of actual learning. Mastery of subject matter by the skills teacher is especially important since much of his teaching should be demonstration.

The remaining portion of the book, except for the last chapter, deals with suggested methodology to be used in teaching the various business subjects. As one may well expect, the major emphasis is placed upon the "Big Three" in business education — typewriting, shorthand, and bookkeeping—but the other business subjects are not entirely neglected.

For each of the "big three" a chapter is devoted to preparing to teach it, and another chapter is allotted to the actual teaching itself. In discussing basic business education (including such subjects as general business training, economic geography, business law, consumer education, business organization, and economics), the authors believe that some of the content of these subjects is of such fundamental importance that it should be taught to all students,

by experienced, well-prepared teachers.

In the final chapter possible problems confronting the beginning teacher are presented, pointing out common weaknesses in classroom teaching and offering possible solutions.

Supplementary readings for the various phases of business education are offered at the end of each chapter. They should be especially helpful for those desiring to explore further some particular phase of business education.

The trio of authors — Tonne, Popham, and Freeman—need no introduction to business teachers as they have contributed frequently to business education journals. Tonne is especially remembered for his *Principles of Business Education*, which was voted one of the "Fifty Best Books in Education" in 1947.

A busy teacher will definitely profit from spending a few hours reading this latest book in the Gregg Business Education series. A copy should be on his professional bookshelf. —RALF JAY THOMAS.

Motion and Time Study

By RALPH M. BARNES

Published by John Wiley and Sons, New York, 1949; 540 pages; Price, \$5.

This book treats the subjects and problems usually encountered by the industrial engineer.

The late Frank B. Gilbreth and his wife, Lillian M. Gilbreth, the characters in the recent best-seller, *Cheaper by the Dozen*, were pioneers in the field of motion and time study. They established the symbols which are used by the industrial engineers, and are now known as "Therbligs."

The seventeen original therbligs, *Gilbreth* spelled in reverse, are still in use, and more have recently been added, making a total of twenty-four.

The following therbligs illustrate what is meant by the terms: Search, find, select, acquire, start, or any operation performed by the employee under observation.

Dr. Barnes, who is professor of industrial engineering and director of personnel, College of Engineering, State University of Iowa, is presenting in this textbook a detailed study of the field of motion and time study, beginning with definitions of terms and techniques used, such as: micromotion, chronocyclegraph, process chart, simo-

chart, therbligs, symbols, time standards, unavoidable delays, wage-incentive system, timing, observation sheet, elements, cycles, and savings factor.

The book is divided into three parts: Motion and Time Study, Work Methods Manual, and Motion and Time Study Applications.

The purpose of the book could be summarized by three simple mathematical relationships: Motion and time study equal a saving of time and effort; saving of time and effort equals more production; and, more production equals more profits.

Dr. Barnes writes with scientific authority and accuracy. His statements are clear and concise. His treatise is well suited for use as a college textbook or as a reference book for business establishments. The use of photographs, illustrations, and sketches makes this an excellent contribution to the field of business.—CLARENCE A. SWENSON.

Contributors to This Number

HELEN SHIRLEY KELSO CARNEY (MA, Northwestern University) was appointed instructor of French in the Department of Language and Literature, Kansas State Teachers College, Pittsburg, September, 1947. She is a graduate of Kansas State Teachers College, degree AB, *cum laude*, 1936; and of Northwestern University, Evanston, Ill., degree MA, with major in French, August, 1937. She has completed additional graduate study in English and modern foreign language at French School, Middlebury, Vt.; French House, Mills College, Oakland, Cal.; and at Kansas State Teachers College. She is a member of Kappa Delta Pi, international honorary society in Education; Alpha Mu Gamma, national honorary fraternity in Foreign Languages; and Phi Mu Gamma, national honorary and social sorority in Fine Arts. Her teaching experience includes one year, 1937-1938, in Community High School, Plano, Ill.; and three years, 1938-1941, as teacher of French, Junior College, Fort Scott, Kan. She has contributed articles to *The French Review*, journal of the American Association of Teachers of French.

JULIA ROSS CHRISTIE was appointed reference librarian, Kansas State Teachers College, Pittsburg, September, 1948. She is a graduate of Kansas State Teachers College, Emporia, BS in Education, with Library Certificate, 1938. Her teaching and library experience includes one summer as assistant in the Public Library, Fort Scott, Kan.; two years as district supervisor of the WPA Library Project in 15 counties of southeastern Kansas, also two years as Bookmobile Librarian in Bourbon County, Kansas. For four years, 1942-1946, she was instructor in the high-school department of the Kansas City College and Bible School, Overland Park, Kan.; served as principal one year, 1943-1944; and as librarian and registrar for the high school and college departments, four years. She was employed as order librarian in the library of the University of Kansas City, Kansas City, Mo., in the summer of 1946; and as medical librarian one year, 1947-1948, in the library of the Kansas State Sanatorium, Norton. She is a member of the Kansas State Teachers Association, and of the Kansas Library Association.

KENNETH LYNN HILLIER (MS, University of Minnesota) was appointed instructor in the Department of Commerce and Business Administration, Kansas State Teachers College, Pittsburg, September, 1949. He is a graduate of State Teachers College, Mayville, N. Dak., AB degree, 1939; and of the University of Minnesota, Minneapolis, MS degree 1947 with major in Agricultural Economics and Business Administration. He is a graduate of the U. S. Army Technical School, Grand Rapids, Mich., 1943, with the rating of Forecaster-Meteorologist. He also studied one year at the North Dakota State Agricultural College, Fargo, majoring in agricultural economics and business administration. He is a member of Pi Omega Pi, national honorary fraternity of Commercial Teachers; Sigma Alpha Epsilon, social fraternity at Concordia College; Lettermen's Club at North Dakota State Teachers College. In 1940, he established a new Department of Commerce, with one assistant, in the Senior High School, Cooperstown, N. Dak., and served as coach of athletics. He was director of athletics, Hatton, N. Dak., one year. In 1944-1945, he was Staff Weather Officer, in charge of pilot education in meteorology, overseas. In 1947-1948, he was educational director, Coöperative Educational Association, Mille Lacs County, Minnesota, in charge of employee training and adult edu-

cation. He was also county coordinator of rural coöperatives. His experience outside of teaching included one year, 1936-1937, as foreman and timekeeper in a commercial warehouse; one year, 1941-1942, as bookkeeper and accountant, U. S. Army Post Exchange; two years, 1943-1945, as Staff Weather Officer and Forecaster, USAAF. He established, managed, and directed for one year *The Community Builder*, a county co-operative newspaper, and served as feature writer.

WALTER S. LYERLA (PhD, State University of Iowa) is a graduate of Kansas State Teachers College, Pittsburg, BS degree, 1918. He is also a graduate of the University of Chicago, AM degree, 1929; and of the State University of Iowa, PhD degree, 1936. He is a member of the Order of Artus, national honorary fraternity in Economics. His teaching experience includes five years, 1914-1919, as instructor of business subjects and principal of the Senior High School, Chanute, Kan.; and one year, 1934-1935, as instructor of economics, State University of Iowa, Iowa City. In September, 1919, he was appointed assistant professor of business subjects at Kansas State Teachers College, Pittsburg; and in 1927, he was promoted to his present position as professor and head of the Department of Commerce and Business Administra-

tion. He is a member of the National Education Association, National Commercial Teachers Federation, Kansas State Teachers Association, and Kansas Teachers of Business.

JEAN FIELDER MCCOLLEY (AM, Syracuse University) was appointed assistant professor of English in the Department of Language and Literature, Kansas State Teachers College, Pittsburg, June 1, 1949. She is a graduate of Kansas Wesleyan University, AB degree, 1927; and of Syracuse University, AM degree, 1928. She has also completed the residence and course requirements for the PhD degree at the University of Illinois. Her teaching experience includes six years as instructor of Freshman English, University of Illinois; four years as instructor of English and history, Senior High School, Dixon, Ill.; and two years as head of the English Department, Cottey Junior College for Women, Nevada, Mo. She is a member of the National Education Association, National Council of Teachers of English, Kansas State Teachers Association, and of Sigma Tau Delta, national honorary society in English.

WILLIAM HENRY MATTHEWS (MA, University of Kansas) was appointed instructor of physical science, Kansas State Teachers

College, Pittsburg, in September, 1918. During World War I he was an instructor in the Student Army Training Corps of the U. S. Army on the College campus, also in the training program for veterans following the close of the war. In 1920, he was promoted to the rank of assistant professor of physics and director of adult education, in which capacity he was supervisor of vocational courses sponsored by the Kansas State Board for Vocational Education, and during World War II he was supervisor of War Production Training. In 1945, his title was changed to associate professor of physics and director of adult education and veterans training, in which capacity he serves as coördinator of the veterans training program. He is a graduate of Kansas State Teachers College, Pittsburg, degree BS, 1920, with major in physical science; and of the University of Kansas, Lawrence, degree MA, 1930. He is a member of the National Education Association, American Vocational Association, Kansas State Teachers Association, Kansas Vocational Association, Kansas Academy of Science, and Kansas State Physical Science Association. He is a member of Phi Delta Kappa, national honorary graduate fraternity in Education, and has been a contributor to the *Proceedings* of the Kansas Academy of Science, and *The Educational Leader*.

WALTER PENNINGTON (PhD, Northwestern University) was appointed assistant professor of English language and literature in June, 1939; was promoted to associate professor in 1940; and to the rank of professor in September, 1949. He is a graduate of Union College, BS degree, 1923; of Northwestern University, MA degree, 1925, and PhD degree, 1930. His professional preparation was received at the State Normal School, Oneonta, N. Y., and at the State College for Teachers, Albany, N. Y. His teaching experience includes one year, 1923-1924, as principal of the Senior High School, Pine Plains, N. Y.; five years, 1926-1931, as instructor of English, Northwestern University; four years, 1931-1935, as professor of English, University of Wichita; and four years, 1935-1939, as head of the Department of English, College of Emporia, Emporia, Kan. He is a member of the National Education Association, National Association of College Teachers of English, College English Association, Modern Language Association of America, Kansas State Teachers Association, Kansas Association of College Teachers of English, Kansas Association of Teachers of English, and the American Association of University Professors. He has been a contributor to the *American Peoples Encyclopedia*, *Nelson's Encyclopedia*, *Modern Language Notes*, *Philological Quarterly*, *Col-*

lege English Association Critic, the *Bulletin* of the Kansas Association of Teachers of English, and *The Educational Leader*.

EUGENIA HORTENSE SMITH (MA, University of Kentucky) was appointed instructor in the Department of Commerce and Business Administration, Kansas State Teachers College, Pittsburg, September, 1949. She is a graduate of the University of Kentucky, Lexington, degree BA, 1932, and MA, with major in Business Education, 1948. While a student in the Graduate School, University of Kentucky, she was awarded the Margaret Voorhies Graduate Scholarship for high rank in scholarship, personality, and research ability. The same year she was cited for outstanding scholarship and leadership in the Annual Honors Day Convocation. She served one year, 1947-1948, as counselor on the staff of the Dean of Women, University of Kentucky. She is a member of Kappa Delta Pi, international honorary society in Education; Delta Pi Epsilon, national honorary graduate fraternity in Business Research; Pi Omega Pi, national honorary fraternity of Business Teachers; and is secretary of the Advisory Board, Young Women's Christian Association, Kansas State Teachers College. Her teaching experience includes fifteen years, 1932-1947, as teacher of English and

business subjects, Senior High School, Horse Cave, Ky.; and one summer session, 1948, as visiting instructor, Department of Office Administration, University of Mississippi. Her business experience includes service as secretary, Millett Hardwood Lumber Company, Louisville, Ky.; and secretary, The Armored Force School, U. S. Army, Fort Knox, Ky. She served one year as treasurer, Kentucky Business Teachers Association; one year as social chairman, Alpha Gamma Chapter of Kappa Delta Pi; and one year as treasurer of Nu Chapter, Delta Pi Epsilon.

RONALD G. SMITH (PhD, University of Kansas) came to Kansas State Teachers College, Pittsburg, as associate professor of mathematics, June 1, 1930; was promoted to the rank of professor in 1932; and was named head of the Department of Mathematics, July 1, 1946. He is a graduate of the University of Kansas, AB degree, 1924; AM degree, 1926; and PhD degree, 1930. He has completed additional graduate study at the University of Chicago and at the California Institute of Technology, and one year of postdoctoral study at Duke University. His teaching experience before coming to Kansas State Teachers College included five years, 1924-1930, at the University of Kansas, and one year, 1927-1928, as graduate assistant at California Institute of Tech-

nology. He has contributed numerous articles to the *University of Kansas Science Bulletin*, *Bulletin of the American Mathematical Society*, *American Mathematical Monthly*, *Bulletin of the Kansas Association of Teachers of Mathematics*, and *The Educational Leader*.

ROBERTSON I. STRAWN (PhD, University of Michigan) was appointed head of the Department of Language and Literature, Kansas State Teachers College, Pittsburg, September, 1946. He is a graduate of Kansas State Teachers College, AB, 1931; of the University of Kansas, MA, 1934; and of the University of Michigan, PhD, 1941. His teaching experience includes seven years, 1932-1939, as instructor of English in Senior High School and Junior College, Kansas and Oklahoma, and six years, 1940-1946, as head of Department of Fine Arts, State Teachers College, Kearney, Neb. He is a member of Kappa Delta Pi, international fraternity in Education; Pi Kappa Delta, national honorary fraternity in Forensics; and Sigma Tau Delta, national honorary fraternity in English. As an undergraduate student at Kansas State Teachers College he served one term as president of the Student Council, one term as editor of the College Annual, one term as president of the Young Men's Christian Association, and on several occasions as

member of debating and dramatics groups. He is author of *The Literary Criticism of Henry L. Mencken*, *Communication in the Iroquois Nation*, and numerous articles contributed to professional

journals. Under his direction the College has equipped a complete radio studio, and now conducts regular daily educational broadcasts over Stations KOAM and KSEK.

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