

Vol. XXXVIII

No. 8

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CONTENTS

Page No.

A History Lesson 297

The Idea of the University
By : R. Bandopadhyay
[Tikamgarh] 298

The Reliability of an Objective
Test 303

By : Prof. S. K. Dasgupta [Meerut]
Observations on Reform of
Examination 309

By : D'angel [Maharashtra]

Lessons in Training Colleges :
Observation and Guidance
By : [Kum.] S. S. Boyce.
[Bombay] 313

Machines for Education 316

By : Dr. F. Paul Thompson
[London]

Indian Materialism and its imp-
act on Education
By : Prof. Rajendra Pal Singh
[Mathura] 323

Instincts and Intelligence
By : L. N. Gupta [Allahabad] 325

Correspondence 327

News and Views 329

Reviews and Notices 331

Editorial Notes 334

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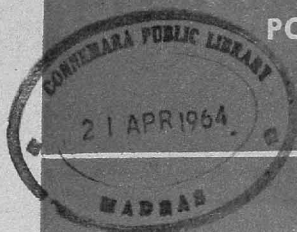
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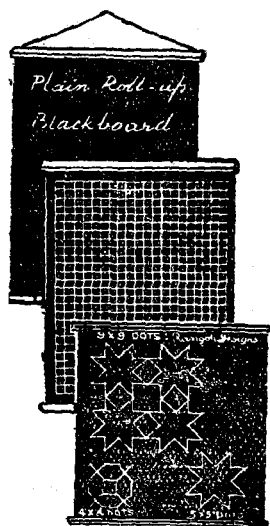
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Thought for the Month

A HISTORY LESSON

History is not merely a merely a microfilm of names, dates, and happenings. It never was. Like everything worth teaching, history is made up of lessons in the ways and wiles that make the world what it is and our strivings what they are. History does not think backward. Ever since the time of creation history has meant thinking forward. In our time it means eliminating senseless hate and violence and instilling the attitudes and feelings that make future events worth living through and recording.

Nor is history, we must constantly remind ourselves and our children, shaped only by the illustrious or the mighty. History is shaped by every one of us—you and me and our children and our grandchildren. It is shaped by our deeds and our misdeeds, by the words we utter and the words we leave unspoken.

Our goal should be nothing short of rearing young people who can and will carry out the responsibilities of freedom, who can and will continue to cherish the human values we uphold, who can and will possess a reverence for life and faith in its goodness and purpose.

[*The PTA Magazine*
Chicago, Jan. '64]

Margaret E. Jenkins
(President, N. Congress of
Parents, and Teachers).

THE IDEA OF THE UNIVERSITY

By :—R. Bandopadhyay, *Tikamgarh.*

The term University is derived from the mediaeval Latin word 'Universitas' which was originally applied to mean any community or corporation and did not particularly refer to a body devoted to learning and education. It was first found to be used in this connection in a manuscript dated in the earlier part of the 13th century relating to the University of Oxford. In this manuscript the phrase occurs : "Universitas magistrorum et Scholarium," a society or fellowship of teachers and scholars. For many decades in the latter part of the 13th century and the beginning of the 14th century, the term 'Universitas' used to be linked with words like "magistrorum et scholarium", to denote a body devoted to learning and education. In the course of time, probably by the end of the 14th century, the term 'Universitas' began to be used alone to denote a lawfully recognised community of scholars and students.

Research

The university is a community of teachers and scholars engaged in the pursuit of truth. Since truth is discernable by systematic search, research is the first concern of the university. Research is an effort to stretch the boundaries of knowledge. It has vital implications on the welfare of the society. Research in the various fields enable man to bring all-round improvement in society and ultimately to improve his own lot. The extent to which any university encourages and carries on research reveals the quality of the University.

Knowledge

The university owes its existence to society. Society invests it with a legal status and provides it with material support so that the university may function as a Centre of Research for the well-being of the society. The university should, therefore, concern itself with the needs of the society in which it exists. Society requires men and women trained in Arts, Science and different professions for handling jobs which can be occupied by persons with scientific outlook. The second task of the university is, therefore, teaching or the dissemination of knowledge. It is the duty of the university to provide training to meritorious aspirants and produce competent and skilled doctors, lawyers, engineers, scientists and other profession-

ables to meet the changing requirements of the Society. The university has professional schools and teaching organisations for preparing its graduates for various jobs.

The Research Worker

Teaching is not a task to be conducted in isolation of research. It vitally requires the material which research alone can present it. The best research worker is ideally the best instructor. The instructor who is engaged in research has to keep abreast of the most recent developments in his field. He possesses clear concepts about the things he teaches. Such a teacher alone can cultivate in his students the spirit of science; he alone can direct his students to the spring of knowledge. Others who are not themselves carrying on research can only transmit simple dead results and bare facts which also be crammed from books. The researcher-instructor is a continuous source of inspiration to his students. In contact with him the student learns to ask intelligent questions and develops a scientific attitude. This is necessary because it is the university on which the society relies for the initial training of those who will, in their turn, advance knowledge further.

The university must, therefore, stimulate the student to stretch the frontiers of knowledge and offer him all the facilities to do so. It must fill in the student an unsatiated thirst for truth. This the university can do only if it is a place where research is carried on, and the researchers instruct the students. "Unless," stresses Sir Harold Himsworth, "the student associates with men bent on search for new knowledge, he will never learn to appraise accepted beliefs, or acquire that understanding which will allow him in his turn to face the unknown." * This provides an excellent example of the 'Feed Back' process. We must engage more and more researchers to teach our students in order to extract more and more researchers from the Universities. Research is thus a source of vitality in teaching and teaching detached from research robs the university of the cardinal force. Again research conducted in isolation of teaching lowers the standard of research itself. Thus research and teaching are indivisibly intertwined with each other and each reacts favourably on the other. It is in fact the fusion of the two that provides the real spirit of the university. By segregating them, this spirit perishes. People have sometimes asked as to which of these functions should be given more weightage. They forget that teaching and research are not competing tasks of the university but mutually invigorating.

* (Sir Harold Himsworth; "Society and the Advancement of Natural Knowledge;" British Medical Journal; Vol. 2; No. 5319; p. 1557).

The Student and the Teacher

In a university the student and the teacher has the academic freedom to do research in their own way and teach in the way they deem fit. The State bestows on the university the right to carry research and teaching unbridled by party politics or by any other considerations which may be uncongenial to the spirit of free enquiry, because it desires that somewhere within its confines pure and unbiased research be carried on to serve truth. The pursuit of truth and the spirit of research should be allowed to develop untrammelled by outside interference. "An institution", says R. A. Butler, "devoting itself to higher technical studies must have complete academic freedom; it must have first-class staff and equipment, and real facilities must exist for teaching to be carried out in an atmosphere of research". Research and teaching are thus two functions of the University. These are, however, not the only two functions of the University; there is something more which it should do for the student and the society.

Social Training and service

The student comes to the university in order to study the arts and sciences and to learn a profession by which he may earn his living. To a majority of them a university degree is an absolutely indispensable tool to get a good profession and success in a society. The university must, therefore, train the students to become competent Doctors, Lawyers, Engineers and Architects, according to the needs of the Society. But this is not all that the university should do for him. After leaving the portals of the University, the student has to face the work-a-day world. In the daily life, the doctors, lawyers and engineers are not professional men all the time. "The professional men", according to Late Mr. J. Davison, a distinguished writer and the idol of Newman, "is not only one which a person engaged in a profession has to support. He is not always upon duty. There are services which he owes, which are neither parochial, nor forensic, nor military, not to be described by any such epithet of civil regulation, and yet are in no wise inferior to those that bear these authoritative titles; inferior neither in their intrinsic value nor their moral import, nor their impression upon society. As a friend, as a companion, as a citizen at large; in the connection of domestic life; in the improvement and embellishment of his leisure, he has a sphere of action, revolving, if you please, within his profession, but not clashing with it; in which if he can show none of the advantages of an improved

* R. A. Butler, "The Future of Technical College"; The Journal of Education; (London) October 1950).

understanding, whatever may be his skill or proficiency in the other, he is no more than an ill-educated man." Besides, men are first men and then something else. This was emphasized by Newman and Mill. "Men are men," says John Stuart Mill, "before they are lawyers or physicians or manufacturers: and if you make them capable and sensible men, they will make themselves capable and sensible lawyers."

The university should, therefore, also be concerned with men as men. The university should send out of its portals capable, cultivated and sensible human beings. It must impart students that sort of training which may enable them to lead their private lives with elegance and intelligence. Life in the university should give the student the tact and commonsense to talk with their companions of each and every class and conduct his social life with dexterity and deftness. It should instil in the student social sensitiveness, self-control, co-operation and tolerance—qualities necessary for living graciously and efficiently with one's companions and neighbours. It should train minds and breed "men and women who believe in reason and the rational approach, whose minds are well furnished, receptive, alert, honest and adventurous."*

The university educated man must possess a perspective about values and the faculty to transmute knowledge so that it becomes wisdom. He should possess a delicate taste, impartial and impertable temperament and courteous behaviour. Each of these qualities plays an important part in humanising the personality of the student.

The state too expects some other contribution from each member apart from the duties that he performs as a professional man. The modern state has to handle multifarious issues of an infinite variety and enormous intricacies. In order to deal with these intricately outerwoven issues, the state has to take into consideration the public opinion which, according to Lord Bryce, embodies the mass of ideas operative in a community regarding matters that interest it. In modern states, therefore, public opinion is of invaluable assistance in steering policies. If the Government has to succeed, intelligent and critical public opinion is imperative. The state, therefore, expects the university educated man to be always alert to thought and action and to take an active part in the affairs of the state. It expects them to discuss with free and enquiring minds all the grave problems of the time, social, economic, philosophic and political. The university is entrusted, observes professor Huston Smith "with the task of preparing people to see how they can act responsibly in

* Sir Frederick Ogilive, "the British Universities," Current Affairs Pamphlet No. 68 London, Carnegie House, November, 1948.

the political situation that confronts them..... It can help them to know the basic facts that bear upon the crucial public problems of our day. In all this, the goal is a generation of politically educated and concerned citizens who will leave their college walls determined to participate fully in the democratic processes of Government, trained to discuss political issues in the light of reason and truth, even watchful of their Government at its every level, and staunch defenders of civil liberties in every place and every time."¹ The university trained men and women should be capable of organising thought and achieving rational and informed political decisions. Furthermore, they should be capable of expressing their thoughts in a simple, unambiguous and interesting form. This is necessary because, as has been already stated, public opinion is the aggregate of the ideas that all men hold regarding matters that affect them. In order, therefore, that an enlightened and sound public opinion may take root, it is imperative to educate and enlighten the ignorant. "There is", stresses M. Ogle, "ample evidence to demonstrate that when they have knowledge, they make judgments whose primary motivating factor is reason.....Men will make decisions or choices by means of a reasoning process when they have knowledge."²

Education of the whole man

It is, therefore, necessary to spread knowledge among the ignorant. The state expects the university educated man to subscribe to this and help in the cultivation of an enlightened public opinion." This the student can do only if he himself possesses his independent opinion and can express his ideas. The university should, in short, also develop in the student that human wholeness and civic conscience which the co-operative activities of citizenship require, beside making him a successful parent and neighbour. It would be, in fact, utterly inhuman on the part of the university, if while preparing the student for some profession it does not give him that sort of training which is of significance to him as a human being and as an ordinary citizen. The university should enable the student to make better lives by not merely developing the student's managerial or technical capacities but also by developing his spiritual, intellectual and esthetic powers. University education should aim at cultivating the whole of the personality of the individual. The third task of the university is, therefore, the education of the whole man.

(Contd. on page 308)

¹ Prof. Huston Smith "The Purpose of Higher Education"; Harper & Brothers, New York, page 119.

² M. Ogle; "public opinion and political Dynamics"; Boston.

THE RELIABILITY OF AN OBJECTIVE TEST

By:—Prof. S. K. Dasgupta, M. Sc., M. Ed., *Meerut*.

Whenever we measure anything, that measurement tends to contain a certain amount of chance error. This chance error may be small or large in amount, but to some extent it is universally present. The two sets of measurements of the same features of the same individuals do never exactly duplicate each other. The fact that repeated sets of measurements never exactly duplicate one another is what is meant by 'unreliability' of the measures as also of the instrument of measurement. However, at the same time, repeated measurements of a series of objects or individuals will ordinarily show some consistency. The tendency towards consistency from one set of measurements to another is the reverse of the fact of variation among repeated measures and is designated 'reliability of the measures'.

The consistency of a set of measurements may be approached from two different view-points. In the first, one is concerned with the actual magnitude of errors of measurement, expressed in the same units in which individual scores are expressed. One thinks of a series of repeated measurements of some characteristic of a particular object, and of the distribution of scores which would result from this repeated measurement.

Reliability co-efficient

Another approach to consistency in measurements of this kind may be made in terms of the consistency with which the individual maintains this position in the total group on repetition of a measurement procedure. Two equivalent measures are obtained for each individual within a group; more or less direct index of the consistency of the measurements is available in the correlation between the two sets of scores. This is usually called the reliability coefficient. For many purposes, the reliability coefficient lends itself to direct and simple interpretation since it gives directly the proportion of the variance of any test score distribution that may be attributed to the systematic differences between the individuals and not to chance errors. The degree reliability of a set of measurements is a very important consideration, both in the practical day-to-day use of such tests and in the research projects of various kinds.

In objective testing we usually obtain a score for an individual on some test in order to arrive at some judgment about him or her, and usually to take some practical action. The reliability becomes of critical importance in research studies at a number of places. In studies of prediction and in studies of improvement resulting from training, some degree of reliability in the measure of the criterion being predicted or in the ability being trained is imperative, if one is to achieve the prediction on one hand or the evidence of improvement on the other. Reliability is again crucial in the analytical study of relationships among various groups of tests, where information concerning it occupies an important place. It is only with the information available that it is possible to determine the extent to which lack of correlation among test arises, because the measures cover unrelated aspects of behaviour and the extent to lack of correlation is due to a lack of consistency within every one of the separate measures.

Two types of operation are involved in the evaluation of the reliability of a measuring instrument; one is the experimental and the other statistical. On the one hand, it is necessary to apply the instrument to a defined group of cases following a specified experimental design and under the specified experimental conditions. And on the other hand, the scores resulting from such administration must be analysed by appropriate procedures to yield a statistical value which will represent the reliability characteristic of the test. These aspects are, to some extent independent, in that the same essential statistical procedures may be applied to the data gathered in quite a variety of ways. Traditionally in the discussions with regard to determination of reliability, most of the time or space is devoted to the statistical techniques involved. It is the conviction of Thorndike (1),—and he avers,—“much more attention than has usually been accorded it needs to be given to the experimental aspect. The experimental procedures are closely bound up with the logical aspects of the problem, so that one must first make an analysis of what is to be accomplished by, and what reliability and what purposes are served by, a measure of reliability. The experimental operations must be planned with these purposes in view and evaluated in the light of them”.

The evaluation of the reliability of a test requires a determination of the consistency of repeated measurements. In dealing with human behaviour, however, the person as an individual is quite likely to be changed as a result of the operation of testing, and it is usually necessary to limit sharply the number of times a single individual is measured. In practice, therefore, R. L. Thorndike

recommends, that all procedures of reliability estimation generally useful to education and psychology are based upon getting a small number of measurements, typically only two, for each individual in a representative group. Stability of results is achieved by increasing the number of individuals measured rather than the number of measurements of each. Such measurements give sets of scores, again usually two for each person, for analysis. The usual analysis has consisted of computation of the coefficient of correlation between the two sets of scores, yielding an estimate of average consistency for the, group.

How equivalent measures may be set up, is the question which arises now so that the correlation between them may be had, and how the true variance of a set of scores may be computed so that its ratio to the total variance may be calculated. In fact, these are one and the same problem. Equivalent tests may be defined as tests which have identical true variance, without any overlap in error variance. While on the reverse, the true variance of a set of test scores may be defined as that which is common to that test and an equivalent test.

Different Procedures

Quite a number of different testing and statistical procedures have been propounded to provide the necessary coefficient of correlation between equivalent measures. Many of these represent efforts to develop short-cuts to the planning and administration of two separate tests built to the same set of specifications, and therefore, assumed to be equivalent, while others have been defended as preferable procedures. The major procedures are normally of four types, and each of these forms has its own merits and limitations also. The author thinks that, if an investigator has not enough time at his disposal, it will not be advisable to calculate reliability either by equivalent test forms, or by repetition of identical test forms, because time and administrative facilities are very important. A third is estimating reliability by analysis of variance among test items, commonly known as the 'Kuder and Richardson Method'.

The procedure of the third one and the basic formula of it, were first presented by Kuder and Richardson (2), and the derivation of the formula has subsequently been carried out on the basis of less restrictive assumptions by Jackson and Ferguson (3), and has been related directly to the approach through analysis of variance by Hoyt (4), and also derived by Guttman (5), Horst (6), and

Dressel (7). It has been found by the author that an efficient use of the Kuder and Richardson formula is neither possible nor feasible (15). This is firstly because the test constructor himself must have mastery over this mathematical concept, and secondly, due to the rigid conditions and the limitations of the formula itself.

In case a single form of a test is needed, which case is quite common for research purposes or practical use, it merely appears burdensome to construct two separate tests only in order to find the reliability. Furthermore, when a test is planned and tried out as a part of a research project, time factor troubles the worker much. Hence, in the interest of economy it becomes desirable to set up procedures for extracting an estimate of reliability from a single administration of a single test. The total test is subdivided artificially into two half-length tests and the scores on them are correlated. This correlation gives the reliability of the test-half as long as the original test. The reliability of the whole test then can be estimated by using the common Spearman-Brown Formula, which was originally presented by Spearman (8), with regard to the estimation of the reliability of a measure from the score on a smaller segment of behaviour. This method is popularly known as the Split Half Method.

A simple and objective procedure

A test, whose reliability is to be estimated using this method, can be split into two sub-tests in many ways, and many procedures have been proposed for selection from among the possible alternatives, which may either be on logical grounds or on grounds of convenience. Choosing the alternate items, as a basis for splitting a test, has been widely adopted. This procedure has simplicity and objectivity to recommend it. This procedure of splitting the test was followed by the author too for estimating the reliability of a test in general science for the high school classes, Aligarh Muslim University Schools (15). The odd numbered items were marked with a red pencil, and the even numbered items were marked with a blue pencil, while scoring. The totals of correct responses or the red score, which were the scores of the odd items and those of the blue score that is even items, were written separately on the title page of the test book-lets. The product moment for correlation was then obtained in the usual way. This method was found related to grouping together in a test form items of similar structure and of graduating of the difficulty of items from easy to hard. When the items in the test were arranged in this systematic way, the odd-even procedure provided a simple way of approximating equivalence in the two-half scores. When there are several successive items on the

same topic, as in the present case, and of the same type, which too is applicable in the present case, this procedure automatically divides them evenly between the two half-tests. When the items progress in difficulty, approximate equivalence of the half-tests in difficulty level is guaranteed. In the study referred the computations were done using the following formula :

$$r = \frac{XY - \frac{X \cdot Y}{N}}{\sqrt{x^2 - \frac{x^2}{N}} \sqrt{y^2 - \frac{y^2}{N}}} \quad \text{or}$$

$$r = \frac{\frac{1}{N} \sum xy - \frac{\sum x \sum y}{N^2}}{\sqrt{\frac{1}{N} \sum x^2 - \frac{(\sum x)^2}{N^2}} \sqrt{\frac{1}{N} \sum y^2 - \frac{(\sum y)^2}{N^2}}}$$

The reliability coefficient of the Test before item selection for class X came to .78.

The reliability coefficient of the Test after item selection for class X came to .82.

The reliability coefficient of the Test before item selection for class IX came to .92.

The reliability coefficient of the Test after item selection for class IX came to .91.

The reliability coefficient of the Test before item selection for classes IX and X combined came to .92.

The reliability coefficient of the Test after item selection for classes IX and X combined came to .92.

The author found that the population to which he administered the test was highly heterogenous. This character of the population has effected the reliability coefficient. It was heterogenous in the sense that the boys' schools in which the test was administered drew pupils from two distinct socio-economic levels, which fact, it is well known from experience, influences test performance to a considerable extent. The influence of the factors discussed above inevitably worked to increase the error variance in the test and generally tended to reduce the reliability or to detract from its significance. The reliability coefficient of the test for the whole group of examiners consisting of both the classes has come to 0.92, which is a high enough index of reliability for individual discrimination, but he universe from which this index was computed was so heterogenous hat one begins to suspect that the index as found may possibly be somewhat inflated.

It is difficult to say definitely what the index of reliability would be if the group on which it was calculated was more normal and less heterogenous, but judging from a subjective angle one is led to believe that the reliability would turn out to be better than what was actually found.

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(Contd. from page 302)

The university must, therefore, perform the three functions, those of research, the transmission of knowledge and the education of the whole man. These three factors are inextricably inter-linked in the idea of the university, and none of these can be cut off from the other two without crippling the spirit of the university. The true university performs these three tasks within an institutional framework. It is simultaneously a research centre, a professional school and a cultural centre.

OBSERVATIONS ON REFORM OF EXAMINATION

[Vide News Letter No. 5. Jan. '64 : the S. S. C.

Examination Board, *Poona*.]

By:—D'angel [*Maharashtra*].

Mr. D. H. Spencer, Education Officer of the British Council, Bombay, deduces rightly, "that not only do they (students) not learn what they are supposed to learn at school but that—and this is the crux of matter—such half-learning does not stop them from passing the (S S. C.) Examination".

Mr. Spencer would have us believe that it is quite possible for schools to improve their English teaching; only they do not do it from lethargy or inertia created by the stereotyped nature of the question paper in English with its excessive reliance on the text-book.

This reading of the situation is not so accurate. Schools simply cannot improve their English teaching for the following reasons:—

(i) Paucity of Teachers

There is an utter paucity of competent teachers of English consequent on the barren policy of the abolition of English from standards V, VI, and VII pursued over a period of twelve years since 1948. To-day the teaching of English to these classes is mostly in the hands of undergraduate teachers, many of whom have only the four-year course in English to their credit.

(ii) Lack of Good Text-Books

The existing books are bulky and defective in many other ways. These cannot be tackled within the reduced number of periods. As a result there is a gap, year after year, in the pupils' knowledge of the subject.

(iii) English Teaching in Primary Schools

The 'blessed' thing that is going on in the name of English teaching in primary classes V, VI and VII, brings to standard VIII a motley crowd of students whose knowledge of English is next to nothing. How to administer the Departmental Reader IV or any other Reader to these 'innocents' is our headache for which the Department has produced no specific.

(iv) **Inordinate Delay**

Students under the seven-year course in English entering standards IX and X have to be shepherded back to the old four-year course in the absence of the Departmental Readers V and VI.

However, as these considerations are not relevant to the question referred to Mr. Spencer, he can only suggest that the examination should "be recast to provide a more accurate test of real and fully digested knowledge," in the hope that this by itself "will force schools to improve their English teaching".

Every attempt to evolve a better type of question paper in a subject must be hailed as a step towards our aim in teaching that subject and assessed on the merits of the case. It is in this light that we shall view Mr. Spencer's comments on the Board's question-paper in English.

Mr. Spencer rightly complains that "too high a percentage of marks—47%—is allotted to questions on the prescribed texts".

Evidently the percentage worked out by Mr. Spencer is the total of marks for questions 1, 2 and 7 in the Board's paper. It should not, however, be forgotten that one of the themes under question 3 is connected with, and the text of question IV is taken from, the prescribed book. The percentage of marks assigned to the texts is, in fact, even higher than 47. And thereby hangs a tale. When the Board's Selections in English (L. L.) for the triennium 1957-59 saw the light, that book came in for severe criticism for its difficult vocabulary and style. The Board ultimately yielded to the criticism and made several concessions to the candidates. The present-day pattern of the question-paper in English reflects the policy of conciliation adopted by the Board in 1957.

Changes Suggested

Mr. Spencer thinks that "too high a proportion of marks allotted to questions on the prescribed texts" encourages cramming and the use of bazaar guides.

In this context it is pertinent to note that the Bombay University had, for a number of years, set a paper in General English without texts at its Matriculation Examination. But the S.S.C.E. Board, taking over from that body, reinstated the text-book.

The fact is that the educational pendulum oscillates from the text-book to the no-text-book points with an admixture of both as a halfway house in the interval.

Let us not suppose that bazaar guides sink with the text-book.

Nevertheless, there is some force in the plea that the degree of reliance on the texts should be reduced.

We endorse Mr. Spencer's suggestion that two questions on the texts should be enough—one on the prose passages and one on the poems. We approve of the type of question—2 (a)—he has proposed for the poems. We support Mr. Spencer's view that the questions on precis-writing and paraphrase be dropped. We agree that questions 2b and 2c in the Board's paper be discontinued forthwith since they serve no useful purpose. We appreciate Mr. Spencer's observations on the type of passage to be set for conversion into the indirect form. We are glad Mr. Spencer suggests deletion of the question on essay-writing. Story-writing is good enough for school students. We welcome the suggestion that some marks should be reserved for neatness and good hand-writing.

Mr. Spencer pleads for "variety in the kind of questions employed" and he is against the "stereotyped nature of the paper which appears to follow the same pattern year after year with no variation".

While it must be conceded that a stereotyped pattern leads to stagnation, it is difficult to see how things can be otherwise at an external examination which must maintain a *uniform standard* year after year in fairness to the candidates.

Reforms suggested

Let us now consider the reform suggested by Mr. Spencer. He says, "In our specimen paper, therefore, we have recommended that only four questions should be made compulsory (two on the texts, one on comprehension and one on expression) and that the remaining three should be chosen from a much wider range than heretofore".

Taking for granted that the specimen paper drawn up by Mr. Spencer is adopted by the S. S. C. E. Board, that paper too, will, with the passage of time, be a stereotyped pattern; for the topics will repeat themselves year after year. If we change the items every year, the standard of examination is likely to suffer a change.

Moreover, just as there is a case *for* alternatives, i.e. choice of questions at an external examination as advocated by Mr. Spencer, there is an equally strong case *against* the theory of options which may be stated thus :

- (i) The candidate, who is expected to *answer* questions, is also called upon to *select* them in a hurry.
- (ii) The process of selection involves unnecessary reading of whole questions or parts thereof, which the candidate will ultimately reject, resulting in avoidable *loss* of time and consequent *haste* and *waste*.
- (iii) Under the stress and strain of an external examination the immature student is *not* in a position to make a *wise choice*.

(iv) The theory of optional questions indicates failure of educationists to agree on what is indispensable to students.

(v) Optional questions give rise to a *tendency* in the teachers and the taught *not to cover* the whole portion. The principle of selection thus degenerates into a licence for omission of certain items. The findings of Mr. Spencer that out of a total of 59 candidates only three attempted precis-writing and only two did paraphrasing can only mean that many schools have stopped teaching those items without waiting for the Board's decision on the points.

(vi) The practice of optional questions militates against the formulation of a standard or a common yard-stick for the measurement of the candidates' ability, since there is *no* guarantee that the *tasks* set in the various optional questions are *equal* in all respects. (Mr. Spencer concedes the need for a standard when he says, "With alternative questions the level of difficulty should be comparable".) For example, it is one thing to turn five sentences into the passive voice or to put ten verbs in the correct tense or to analyse a couple of sentences into their clauses (Vide questions 10, 9 and 6 in Mr. Spencer's specimen question-paper) and it is quite another thing to write a letter or translate a passage (Questions 7 and 8). It may happen that a bright scholar attempting questions 6, 9 and 10 may bag the maximum marks, whereas another equally clever student tackling questions 5, 7 and 8 may not score more than 70% of the marks for the three questions. Eventually it may turn out that a student who is good at grammar may top the list to the exclusion of one who is good at composition.

(vii) Whereas optional questions help the paper-setter to widen the range of his questions and cover the syllabus for the standard, they *allow* the candidate to *narrow* it down to suit his individual plan.

(viii) The practice of optional questions results in several candidates' misreading or ignoring the instructions and *answering more questions* or parts thereof than are necessary. Since the present method of marking cannot check the evil, which ruins the candidates, besides vexing the examiner, all we can do is to provide *no whole optional questions*.

In the end we, particularly teachers of English, are grateful to the S. S. C. E. Board, Poona, for its healthy spirit of enquiry and to Mr. D. H. Spencer for his candid appraisal of the Board's endeavours

Summing up

This review of Mr. Spencer's comments and suggestions may be summed up thus :

LESSONS IN TRAINING COLLEGES : OBSERVATION AND GUIDANCE

By—Prof. [Kum.] S. S. Boyce, S. T. College, *Bombay*.

The main job of a Professor of a Training College is to guide students to plan lessons and watch how they teach, and then guide them again. The circle moves on—you guide, you observe; you guide and observe again. This never-ending activity can be quite pleasant or can be most onerous. All depends on how you take to the students and how the students react.

If you are convinced that in a professional Training Course, the practical aspect must occupy a prominent place and should be given close attention, you have to plan out ways of guiding and evaluating practice teaching. Practice teaching, to my mind, is work based on actual class-room performance by the trainee. The work should be pre-planned under supervision. I have found that always the work is planned almost under the guidance of the method-master.

The Guide

In my opinion sometimes the plan may be worked out under the guidance of a senior teacher of the school where the trainee is attached. One can always ask a few intelligent and interested students to select their guides from a panel of teachers. Then the student and the guide can work better and understand each other. The panel should be carefully prepared for topics rather than for subjects. [For example, a panel of guides form those teaching History, Geography, Prose, Poetry, Grammar, or Algebraic equation, etc..] The guided plan of the lessons need not be too elaborate and yet should reveal the whole picture of the lesson. There has to be a co-ordination between the plan and its translation into class-room. The temptation on the part of the guide is to spoon-feed the student. The result of this sort of dangerous feeding is at times seen at once in the class where the student's personality is not able to carry out the plan. Even if this is not so, the student becomes an incompetent teacher who can never plan his work by himself. The guide must remember that he is to guide; he is not to give tuition and dictate plans. The difficulty arises when such guided lessons do not get good remarks and the student temporarily feels that he was not properly guided. An understanding Principal and an experienced guide will help the disappointed student to overcome such a feeling. The student has to be told where, to get the source, where to look for the pronunciation of

words, how to prepare aids, how to plan questions, etc.; but he has not to be told the questions he should ask or be given prepared aids. Then there is no research and no activity on the trainee's part and no initiative.

While watching the plan at work, the supervisor must try and find what attempts the trainee has made to teach so that the pupils can learn, whether the objectives he has been made to write in the plan have been understood by him and how far he believes in them to realise them in his teaching.

Constant Watching Undesirable

Although many educationists are of the opinion that all the lessons should be supervised, I feel that that hampers the student's growth. Let him be left to himself for sometime when he can comfortably see how his plan is working out and report to his guide his own experience in the class. At times let him be under the teacher who actually is working, day in and day out, with the class of pupils, if the teacher is experienced and has interest in his work. Such constant watching of lessons makes many a student feel sick, and later he does not care to work out his lessons. The following questionnaire sent to some first-class B.Ed.s, and the rough statistics taken of many first-class in-service trained teachers prove this view to be a correct one.

Questionnaires and the revealing answers

1. Were you always guided in planning lessons ? Yes—70%. At times : No.—30%
2. Do you like to be always guided ? 100% Yes [when under training].
3. Has the constant guiding of your lessons done you good ?
80% It has not helped us, for we now feel that there is no one to guide our lessons. 20% Yes—it helps us to plan our lessons when we want to.
4. Do you plan your lessons now ? 80% No. We cannot plan on our own. 10% No. We are tired of planning. 10% Yes. We were left to plan our own lessons in the College and so have got used to independent planning.
5. Did you like to give lessons at times without a supervisor ?
80% Yes. —60% Yes. because we can see comfortably the working of our plan. 40% : we can be more at ease.
6. What is your opinion now about being always supervised by the College Staff ?—80%—It is good at times to be left alone to give our own lessons. Then we do not become supervision-conscious. Because of that constant supervision we now feel that no one is watching us and we need not

bother how we teach. 40%—We are so used to supervision that we always want some one to see and praise, if and when we have something new to work out. So teaching for its own sake is not there.

Supervisor's Remarks :

The Supervisor's remarks on the observed lessons have to be apt, directive and constructive. The typical stereotyped remarks, like "the lesson is on right lines," "the response was good," "look more lively"—etc., are vague and do not lead the student anywhere.

Some helpful points

It is not so essential that the supervisor should observe the entire period, but that his observation should lead the student to improve his work. Whether the supervisor should watch a full lesson or a part of it depends on the type of the lesson he is observing, the type of the student who is giving the lesson and the supervisor himself. There will be lessons of fresh students and weak students who will have to be watched fully. There will be some unique methods of first-class students displaying their art in the lessons and those should certainly be often watched fully. The following points may help a supervisor, while watching lessons in general : (1) Practicability and clarity of objectives, (2) Display of the depth of the subject-matter, (3) Participation of the pupils in the growth of the lesson, (4) Activities and their productivity—how far they help to realise the objectives, (5) Creation of a suitable atmosphere, (6) Teacher's attitude towards the pupils, (7) How far interest is created in the pupils about the matter under teaching, and (8) Simplicity and clarity of the language used. To junior supervisors, I would rather give such a type of evaluation sheet when they watch lessons.

More Freedom Needed

We talk of freedom and latitude in schools. We should give much more freedom to teachers under training to formulate discipline and principles of work. I would rather have at times students select their own supervisors for the lessons of their choice, or even request the supervisor to leave so when they want to be left alone. A little misuse of such freedom at times does not matter, for the harvest it will produce will be very rich. The students will learn to work out plans and help themselves. They will learn that methods are not meant to be shown to their Professors, but to be used to satisfy themselves and help their pupils in the progress of their education.

MACHINES FOR EDUCATION*

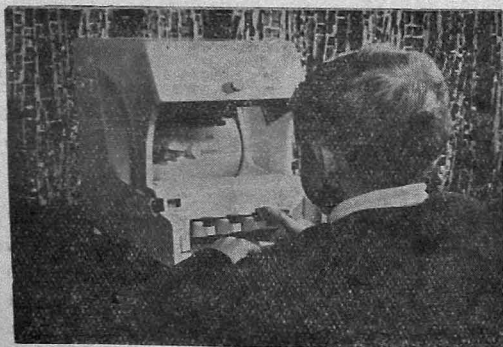
By :—Dr. F. Paul Thomson, A. M. BRIT. I. R. E. (London).

[Member of the Organizing Committee of the Commonwealth Conference on Programmed Instruction for Developing Countries]

In this technical age we cannot afford to tolerate inefficient educational methods : the amount we have to learn in one lifetime is increasing too rapidly.

Teaching methods have not changed greatly for hundreds of years because, until recently, there were no ways which had proved better. During the last few years, however, intensive investigations have been going on to find more efficient methods of teaching and instructing with the result that superbly effective new systems have been developed, and are immediately applicable to the needs of people of all ages, abilities and nationalities. They are of special significance to the Commonwealth, particularly to the developing countries.

Thanks to the massive investigation, made at British and American universities, into the actual mechanics of efficient learning, pro-



The *OLDBOROUGH* teaching machine has a programme written on the notched pages of an exercise book, and is specially useful in recognition exercises for younger and backward children. The pupil presses the lever opposite the answer he thinks is right and—if he is correct—the page turns to a new frame.

grammed instruction by teaching machine is now able to go a good way towards overcoming problems encountered in every country with a demand for improved educational facilities. Among the many pressures likely to be diminished are :

* [*Programmed instruction by teaching machine is a powerful instrument for the advance of education, which itself is the touchstone of development. This article tells of the remarkable advances in method and equipment*].

1. Problems connected with effective teaching of large classes, the provision of lesson-material for literacy campaigns, and the retraining of redundant or older workers.
2. The effects of geographical dispersal on organisation of educational facilities.
3. The difficulties inherent in the collective teaching of people with widely differing backgrounds, outlooks and abilities.
4. The waste of teachers' time on non-teaching functions.
5. Remedial difficulties of backward, mentally retarded, hospitalised, spastic or deaf children and adults, etc.

The expression *teaching machine* is misleading. A far better name



The *ESATUTOR* is a metal book with a linear programme written on cards. The pupil changes from frame to frame by pushing the black knob. The lesson frame appears in the middle window and the pupil writes her response on a sheet of paper appearing at the left. When she changes to the next frame, the right answer appears in the right-side window and her written answer is pushed on under a piece of glass with a hole in it. She marks her answer right or wrong, with a tick or a cross, in this hole.

would be *self-instructional device*, for it may be in the shape of a book—called a *scrambled book* (because the page sequence varies depending upon the answer chosen by the reader), or it may be box-shaped like the “Esatutor” (see photograph 2), or it may be a fairly complex, television receiver-like cabinet (see photograph 3), or a desk-like arrangement (see photograph 4).

A teaching machine is defined in “Programmed Learning and Teaching Machines”, by Mr. Richard Goodman (published by English Universities Press), as “essentially a device capable of replacing a human instructor in the self-organising, self-adjusting teacher-student system”. Conversely, a device only qualifies as a teaching machine if it enables teachers to exercise their techniques and abilities

more effectively. This does not mean that it completely replaces a teacher : its main function is to relieve the teacher of routine work and non-teaching chores so he can devote the maximum time and energy to inspirational teaching and the needs of pupils most in need of individual help. The teacher takes on many of the functions of a tutor.

A *programme* is the lesson-material used with a teaching machine. It must not be confused with the "programme" used with an electronic computer. The programme may be, as already stated, in the form of a scrambled book, or it may be a 35 mm. filmstrip, 2 × 2-inch projector slides, printed cards, rolls or folded sheets of printed paper. It takes the place of a textbook and the customary blackboard information written by a teacher.

According to some experts the planning and writing of a good programme can only be done by a group of specialists. Although this perfectionist attitude has produced some very good programmes it has also caused an acute shortage. There appears to be some need to bring more educational publishers into the programme production field. Their knowledge and resources for the evaluation of manuscripts for proposed textbooks could be turned to good advantage in developing material for programmes and organising presentation and production. They, most of all, are accustomed to being the clearing-house between teacher-authors, and educational requirements. The great need, at present, is to encourage more teachers to try their hand at programme writing.

Before a programme is available for general sale it has to be *validated*. This means it is tried out in a number of schools and the response of pupils is carefully noted. If any part of it is found to be difficult or misleading, it is changed until pupils are unlikely to get more than a certain number of errors, usually 5 per cent. One of the aims of programmed learning is to make sure that, by guidance and careful planning, a pupil gets far more right answers than wrong ones.

A *frame* is one of the short sequences of lesson-material into which a programme is broken down. A pupil is presented with only one frame at a time, and he learns step-by-easy-step, registering a response to each frame before passing on to the next. He does this by studying the frame of information, considering the question put to him, making a judgement or decision, and acting on it. The fact that programmed instruction depends on the student making a series of decisions is claimed to be a good educational exercise in itself. He cannot be merely a passive observer.

There are two main types of programme. A *linear* programme is often called a *Skinnerian* programme after its American originator,

It is the simplest form and basically consists of a short piece of information and a worked example. The pupil is required to fill in a



The *AUTOTUTOR* is an electrically power-operated teaching machine with a branching programme and a multiple-choice answer. The programme frames are projected, one at a time, from the built in 35 mm. filmstrip projector, on to the glass screen in front of the pupil, who reads the frame of lesson material, studies the

question, and presses the button with the letter on it which corresponds with the letter at the end of the answer she thinks is right.

missing word or number, or to complete a sentence. He then presses a lever or turns a wheel, with the result that the piece of paper with his answer on it is pushed under a transparent shield where he can still see it, but not alter it. At the same time, a new frame appears and he also sees the correct answer he should have. The pupil is rewarded if he has the right answer : a space is provided for him to tick his work. If he is wrong, he is left with a memory of the right answer. It is claimed that this is a far better way of teaching than if a pupil were to continue making the same mistake until the teacher has time to mark his exercises and return them to him. The impact on the pupil is far greater when he obtains a sense of satisfaction as the result of having done something right. The "Esatutor" (see photograph 2), is a typical example of a simple linear teaching machine.

The *branching* or *intrinsic* programme developed by Pressey and Crowder in America comprises a frame of information projected on a screen in small, logical units, usually a paragraph or two in length. After each aspect of the lesson-material is developed, the student is given a multiple-choice question and, in choosing the most correct of the printed answers, has to show his knowledge of the subject. By depressing the pushbutton associated with the answer of his choice, he passes on to another frame which starts by informing him whether his answer was correct or not. If he was correct, the frame continues the programme sequence. If he was wrong, the frame supplements his knowledge in the area in which the question has shown him to be weak.

He is then presented with another multiple-choice question which, if correctly answered, results in him being returned to the original frame that caused difficulty, and which he tackles again. It is worth mentioning that many people are confused by the expression *multiple choice question*. They feel that it should be *multiple-choice answer* since the student has to make a choice from several printed answers. It depends a little on how the question is presented as to which of these expressions is the more accurate.

During the course of controlled experiments conducted by the Royal Air Force, the Admiralty, and by British European Airways, the "Autotutor" (see photograph 3), was proved to teach the same subject, to the same standard, in less than half the time taken by orthodox teaching methods. The students were from the normal intake of apprentices or trainees.

Three all-British developments in programmed instruction equipment and techniques are the "Empirical Tutor", developed for technical training by the Royal Air Force School at Uxbridge, the "Clements" teaching machine, developed by Clements Bros. (Displays) in association with the Steel Company of Wales, and the machines produced by Cybernetic Developments.

All three types are in the category of *adaptive* machines. Their versatility results from the designers' recognition of the fact that the nearest machine approach to human-instructor methods can only be achieved if the facilities offered with the programme are comprehensive and the programme, itself, is not restricted to one particular philosophy of teaching method. All these machines provide for the attachment of ancillary audio-visual aids, which can be brought into operation automatically and in synchronism with particular frames, as required. The programme may be linear, branching or a combination. The "Clements" teaching machine makes provision for a written response in the form of a book, which forms the student's record of his abilities and is used at a later date for revision purposes.

Programmed instruction has many advantages from the point of view of the school pupil, college student, and trainee. For example:

1. He can progress at his own speed irrespectively of other class members.
2. He is spared the shame of publicising his errors and weaknesses. The only other person likely to know is the teacher.
3. He cannot be accused of cheating and he knows that the teaching machine can show no favouritism.
4. The amount of work he has accomplished is always definite: he cannot be accused unjustly of laziness.
5. He can catch up if study time is lost through illness. etc.



The *CLEMENTS* teaching machine is the first British-designed integrated programme teaching system. It is housed in a classroom-like desk and has a screen on which dark-background frames of lesson-material are projected from an automatic slide-projector. The student moves from one frame to the next by pressing one of three buttons at the left. Any combination of up to six illustrations, in the slide-box above the desk, automatically light up to explain the text in lesson frames, which may take the form of a branching programme with multiple-choice answers. The student registers his choice of answer by tearing open a section of covered page in a response book specially designed for this teaching system. If his answer is right, he moves on to the next frame. If wrong, he is required to reinforce his knowledge by referring back to earlier frames of lesson-material, which he does by depressing the frame-reversal button. The third button gives optical focus control. Up to six ancillary aids such as a language laboratory tape-recorder, a working model, a chemical experiment, a machine tool, electronic measuring equipment, etc. can automatically be synchronised to come into operation for demonstration—in the same way as the illustration slides are used to explain the lesson-material frames.

6. He is likely to be less influenced by bad classroom conditions caused, for example, by faulty acoustics, difficulty in seeing the blackboard, etc.
7. He can carry out extra studies at any time, whether the teacher is available or not.
8. If learning by correspondence, he is less likely to be bored as the result of reading only books. With a teaching machine he is constantly and actively involved in the learning process in many different ways.
9. He knows that the programme is the best form of teaching material available and his chances of examination success are not so dependent upon the abilities of only a few teachers and textbook authors.

The range of teaching machines shown here has been selected to give a comprehensive impression of devices which cover the entire teaching and instructional range. With them the student is no longer the passive spectator whilst a teacher harangues a class, but is constantly confronted with a succession of challenges which involve him to the maximum in the learning process. It might be thought that lazy youngsters would not be interested in being stirred out of their slothfulness, but experience shows they are as willing to use teaching machine methods as the brighter members of a class. It has been suggested that they are stimulated by what has been called the 'robot' or "automated" aspects of this type of teaching. Undoubtedly, these methods attract some of the glamour of adventure with machines in a scientific age.

New Commonwealth
[London]

[Contd. from page 312]

We approve of questions 1 to 4 in the Specimen Question paper; only the options under Q. 1 (a) should be two and not five, as suggested by Mr. Spencer. We do not favour his plea for options in the rest of the question-paper. We do not accept Mr. Spencer's condemnation of Q. 4 (b) in the Board's paper. We do not think that the topic—conversion into the passive voice—is so important as to deserve a whole question carrying 10 marks. (Q. 10 in the specimen paper). Instead, we would have a question on prepositions and articles. In appreciation of Mr. Spencer's desire to reduce the reliance on the texts, we suggest that the texts should carry only 25% marks. The minimum pass mark for English can then stand at 35%.

INDIAN MATERIALISM AND ITS IMPACT ON EDUCATION

[Part III] *

By Prof. Rajendra Pal Singh, M.A., M.Ed., *Mathura*

A New Scheme of Education

Interpreted in the modern light, Indian materialism can give us a new scheme of education. It can help us in constructing a curriculum that could satisfy basically the needs of the country. In the following few paragraphs I should like to mention a few subjects that a materialist would include in his curriculum, and some he would willingly let them alone.

Purpose of Education

For an Indian materialist (perhaps in common with others) the purpose of education is to develop healthy individual beings with a zest for life. For him, life is to be led on this planet alone and the life hereafter has no meaning for him. Consequently all such subjects and professions that can help live a meaningful life interest him. They open up new avenues to a healthy living. For him there are no eternal and universal values. Values change with time. Realization of one's maximum potentialities is one of the objectives of materialist education. It must be said here that by this I mean to distinguish potentialities of an individual person from the potentialities of an individual soul. 'Realizing to the fullest individual potentialities' means to some freeing 'Atman' from human bondage; and consequently laying stress on the life hereafter and a belief that every individual has a soul as distinguished and independent from body—is a position which a materialist would hardly ever accept as proper or right. For him this should mean providing maximum training facilities according to one's mental abilities and aptitudes and securing jobs commensurate with such training. The selfish longing of a religious man to free his soul unmindful of social obligations is a feature that is entirely absent in the materialist ideology. An individual has obligations towards himself only in relation to society and not independent of it. And, therefore, materialism would have education train men and women in social consciousness. It is this education alone that can possibly

In this article, which forms a supplement to the two articles already published (Jan. and Feb.) in which the ancient Indian Materialism is described and discussed, the writer offers his suggestions regarding materialistic view-point of teaching and its importance.

bring about social cohesion with others. The idea of mutual interdependence is always there. Neither society nor individual should be allowed to progress to the detriment of the other.

Since life cannot be made happier and richer without material well-being, it is this aspect that will receive full attention from an Indian materialist. It is incumbent upon him, therefore, to offer courses in science and technology, both of them being essential for the advancement and welfare of a social order. Science helps an individual to appreciate and understand the world around him. It arouses curiosity and ferments desire to find answers to satisfy it. Technology sets the ball of civilization rolling on an onward path of material improvement. Technology is the answer to mankind's age-old problems of hunger and disease.

Scientific Education

Science teaching in the modern times has acquired immense significance. Mr. Arthur C. Clarke, winner of Kalinga prize, said recently (Newsletter : Vol. I no. 2: Dec. 1962) that two of the greatest evils which affect Asia and keep millions in a state of physical, mental and spiritual poverty, are fanaticism and superstition. Science, in its cultural as well as its technological sense, is the greatest enemy of both. It can provide the only weapons that will overcome them and lead whole nations to better life.

Manual Skill

In common with other philosophical systems, materialism sets a great store by physical and mental welfare of human beings. To this end they make all overt efforts by giving children sound instructions in improving their health. Moral instructions comprising broad field of honesty, truth and doing good to others derive their inspiration from materialism. A materialist knows that a dishonest man or untruthful person is no good for any society. Consequently such types of people should not be allowed to grow and prosper in a country. It would not be out of place to say here that for a materialist "work is worship", although by this I do not mean that it is not so with others. But this is the corner-stone of materialist philosophy. Consequently manual skills have as much value for him as the mental ones.

Materialism and Education

Most of the things that I have discussed above from a materialist's stand-point appear to have been incorporated in the present-day education in India. But the tone and directions are not very distinct. There is also a confusion in the minds of the educationists to-day about

INSTINCTS AND INTELLIGENCE

By:—L. N. Gupta, M. A., L. L. B., M. Ed., *Allahabad.*

Both instincts and intelligence are important in psychology and all the students of psychology know this fact. Both these are generally found in contrasting positions. Where the instincts work in an organism, the intelligence is set aside and that is why a man in anger is said to be devoid of intelligence and rational behaviour. On the opposite it is common fallacy that where there is a play of intelligence instincts are subdued and find no free vent. But the following two observations will show how instincts are helped by intelligence and as such, all instinctive behaviours have a foundation of intelligence. No doubt, in an enraged condition of instinctive activity the power of thinking and acting wisely seems to be lost.

Observation 1 :—A good number of sparrows are given some kneaded flour ready for preparing breads by a lady who thought it an act of mercy in the shape of feeding the sparrows. There are sparrows and sparrowlings. One sparrow with two sparrowlings forms a group. There are others singly and in groups too. The one sparrow pounced upon a bit of flour where on the wall where sparrowlings were sitting. It gave them for feeding and remained itself watching and saving from other sparrows being snatched away which were there. Another throw was made and this time it snatched the bit from another sparrow which was some what sparrow flew down and this weaker. It came upon the wall and now began to eat the flour itself. Being finished the two sparrowlings came to it and started eating from the older sparrow's share. It did not refuse them while it started struggling with another sparrow when the latter attempted to share it. One can imagine in this case the instincts of hunger, parental instinct, and instinct of self-ness working in the one sparrow. But it is not only the instinct that works without applying intelligence. We have seen that intelligence has the many sided application of ability to solve the problems and adjust to the situation in most befitting manner so as to secure success and satisfaction. Think a whit why this one sparrow did not allow to share in the flour being eaten by the sparrowlings. Were the others not belonging to the same group? They were. But there is a thinking involved into it that if it gave some share the two sparrowling would go hungry. This forethought is surely an indication of intelligence which works together with the instincts, and there is a judicious use of parental instinct over the group instinct. Group instinct was thought to be inferior at that particular moment.

Observation 2 :—House lizards often make prey in the night when the insects appear before the light on the walls. A lizard, being observed, showed intelligence in devouring the insects. There are insects of many varieties but all are not devoured up ! Why ? Nature seems to be helping these lizards but intelligence plays no less an important role. A lizard devoured small grassy green insects continuously but there was a blackish grey colour insect different from others. First the lizard went to the insect slyly to make the prey. But lo! it removed itself from the place. But before going away to other side, it made all the enquiries, seeing from all the corners and angles and satisfying itself that it was not wise to take it in. Here again a forethinking appears to the lizard. We cannot say that our senses are misleading agents, but they inform to the mind of the real phenomena and the mind has its well shaped and precise tool, the intelligence, to view the situation and act accordingly. The lizard could devour the insect if it acted instinctively, but it did not do so because it acted intelligently. Another aspect in the case of lizard is how it makes a prey. It is interesting to observe a lizard how it catches a fly just by moving most slowly without any flutter and with great caution and attention, till it all at once jumps over the prey. Another intelligent thing is seen when the lizard catches a big insect. It catches the mouth-side first and holds it into its own mouth. Why? Because it is intelligence that to catch by head will make the victim die soon and be easy to eat it up. These two observations reveal how instincts are subject to intelligence; may it be so that the organism could not show it apparently, but adjusting to situation is an application of intelligence.

Conclusions :—The above observations give the following results:—(1) Every organism has the power of intelligence together with instinctive powers, the degree may indeed differ according to evolutionary nature of organism. (2) Instincts are regulated and even motivated by intelligence into right channels and intelligence helps the instinctive activities, being completed. (3) It is a false notion that lower animals and creatures possess only instincts. Birds, beasts, insects even, are said to possess intelligence and they use it in the situations in which they are put. (4) Intelligence and instincts—are the two sides of behaviour, viz. the rational and the actional. The very definition given by Mc Dougall clearly explains these two in which an organism first sees and reviews the situation and then feels and acts in accordance to the reaction in a peculiar manner. This contemplates that intelligence is implied and works together with instinct. (5) Intelligence precedes instincts when they

(Contd. on Page 330)

CORRESPONDENCE

Higher Secondary Education

Sir,

Some educationists have criticized the All-India Council for Secondary Education for recommending a twelve-year pattern of secondary education. It is argued by them that High School system should not be scrapped, because it has worked well for many decades. It seems they have overlooked many factors which would disprove their assumption that the Higher Secondary system is not an improvement on the High School system.

These critics have rightly said that a vast majority of students is not college-education-minded and, therefore, the Higher Secondary Examination which is very much akin to the Intermediate Examination does not suit their mental calibre. But this is exactly the reason why the new Higher Secondary system has been proposed, which includes Higher Secondary part I and Higher Secondary part II. The students with a higher mental calibre will attempt Higher Secondary part II and the rest will stop with Higher Secondary part I, which will be more or less of the High School standard.

The chief merit of the new proposal is that the new Higher Secondary school will be comprehensive enough to include the High School and Intermediate standards. This will stabilize the Three-year degree course after the Higher Secondary standard. It would be remembered that the chief demerit of the present state of secondary education in India is that different States follow different systems. This leads to different standards and also difficulties of Inter-State migration. A uniform system of Education will sustain the unity of the country. The proposed Higher Secondary system should be adopted without further delay all over the country.

New Delhi

S. G. MAMPILLI

* * * *

Multipurpose School

Sir,

It is well known that on the recommendation of the Secondary Education Commission the Multipurpose Schools came into existence. Explaining a Multipurpose School, the Commission writes :—

“A multipurpose school seeks to provide varied types of courses for students with diverse aims, interests and abilities. It endeavours to provide for each individual pupil suitable opportunity to use and develop his natural aptitude and inclination in the special course of studies chosen by him”.

This implies that the aim of a Multipurpose school and diversified courses is to take into account the individual differences among pupils and offer an opportunity to select a course, according to their natural aptitudes and inclinations. Unless a pupil gets such an opportunity this aim cannot be said to be achieved. And really so, on its implementation it did not happen to be true, because:—

(a) As it was impracticable to open such schools offering all the courses everywhere, the Government in its policy always considered the 'Local Area' in fixing the 'bias' of a school. As a result:—

(b) The local schools (or the new, as the case may be) became 'multipurpose' by name in—agriculture, science, or commerce—whatever subjects they were recognised, but sacrificed their 'General Character' which always kept the doors of the schools open for all the pupils. Worst of all they become 'unilateral' in nature virtually. For many students in a area (as their economic conditions prevented) it became almost impossible to go in a school where their natural aptitudes and inclinations could be satisfied. Thus a pupil was (and is) compelled to make the subject his own subject which the near-by school offers. As a result, such a student expresses his desire to change his subject when he comes in IX or X standards. The principal, being an administrator, is unable to allow such changes just to maintain equal strength in all the subjects. A pupil, therefore, is compelled to study in a subject for which he has either no natural aptitude or inclination. Don't you think that the aim of diversified courses and Multipurpose school has been barred by the policy the Government adopted for its implementation? And, is the policy justified?

Allabada

Shirish Mankad

(Continued from Page 324)

the subjects they should choose for education in a modern India. Should they give preference to what are normally called arts subjects or science subjects? It is also not clear whether they wish to see India materially prosperous or culturally well-off or both. It is not surprising if the people do not know the tools with which to achieve those objectives and accomplish any task if the objectives and the task in question are absent from view.

It is not my purpose to lay down what we should achieve. My aim is to explain in brief an Indian materialist's view-point. And I think I have partly succeeded in doing so.

NEWS & VIEWS

Electronic Grammar

A new machine for teaching the rules of grammar is being tested in Soviet schools. At present, it reacts only to individual mistakes made by pupils. But it will soon be given a memory unit which will enable it to determine the cause of a whole series of mistakes and to take the pupil back to the section of the course which he has not grasped properly.

Its designer, teacher-mathematician Lev Landa, has specialized in the study of learning processes. His first attempt to apply mathematical logic to teaching was made with a group of children who found it difficult to cope with geometry after two years of tuition. Within a few months of applying the rules taught them by Landa, they were as good at geometrical problems as any of their classmates.

Landa then turned his attention to children who knew the rules of grammar but could not apply them consistently. He worked out series of algorisms—a mathematical system using symbols for applying the rules. After learning these, the children made only one-sixth of the mistakes they had made previously.

But Landa was still not satisfied. Rapid learning, he maintained, requires a rapid “feedback” to correct mistakes, and, in conventional teaching, the feedback comes only slowly with the return of corrected exercises by the teacher. This led him to develop a machine which would provide the right stimulus for each child in a continuous stream. (UNESCO FEATURES)

* * *

New Relations; New Responsibilities [Soviet Education]

Expansion of public education in the Soviet Union is combined with heightened responsibility of the family for the upbringing of children. The gradual freeing of the family from the material cares of maintaining their children, far from estranging them from the parents, on the contrary, makes relations between them freer and more educative.

But as is said, much is expected of him to whom much is given. Soviet Society puts greater demands upon the school. The basis of educational work in all forms is to prepare the pupils of socially-useful work. Work in workshops, on experimental plots, as well as talks, lectures, rallies, get-togethers, excursions, etc., are not an aim in itself. Each measure is directed towards solving a definite educative task, is assessed according to the practical effect it has upon moulding the character and behaviour of children and young people.

* * * *

A Great teacher passes away : (Shri Bapusaheb K. Daware)

We regret we have to announce the sad demise of B. K. Daware who passed away on the 1st of March, in Ahmednagar. The late Mr. Daware was connected with the A. E. Society, Nagar, and was for some years the Headmaster of the Society's High School. The present height reached by the Society's School is largely due to the ceaseless efforts of this great teacher who was also a social worker. He was a reputed teacher of English and by his spotless character and devotion to duty influenced all who come in contact with him. In his death, the educational world of Maharashtra has lost a worker of sterling merit and an ideal headmaster.

May his soul rest in peace !

(Contd. from Page 326)

actually appear in the form of behaviour. Forethinking does take place first, whether consciously or unconsciously. (6) Intelligence is that ability which the organism commonly uses in adjusting to the situation and thereby makes the adjustment satisfactory. Intelligence is the inner reaction in an organism while instinct is explicit outer reaction.

Further study :—This small observational study really makes us feel to study further such problems of intelligence and instincts and their relationship. Psychology is indeed a study of behaviours of life-situations in which all the organisms are naturally put and they react in accordance. Indian students offering psychology and interested in psychological studies should get inspiration and encouragement from the West where comparative psychology has made great strides and the explorations, investigations and experiments have no doubt given wonderful results in understanding human nature and its functioning in different situations. Psychology, specially in our country, has, therefore, a larger field and a need also for investigational and experimental study.

REVIEWS AND NOTICES

A HAND-BOOK OF BRITISH EDUCATIONAL TERMS

[Including an outline of the British Ed. System].

By : H. C. Barnard and J. A. Lauwerys. George E. Harrap and Co. Ltd., London, W.C.I. 210 pp. Price 15 s.

The book supplies the need of a guide that offers exact and clear meanings of the various educational terms that are often used loosely. Such common words and terms that are familiar to writers and readers are clearly defined and, where necessary, explained in this book.

In the beginning the book briefly describes the British Educational system stressing its salient aspects and its complicated nature. This information is certainly useful and relevant, particularly to those who are interested in the past as well the future development of this important subject, being not only a record but an interpretation.

The meanings and the explanations given in respect of the various terms of some, which go to form educational thought, are sure to help writers in points of clarity, accuracy and force too. Words and terms that we often come across while going through educational writings are clearly explained and defined (for example : Academy, House, Extrovert, Two-factor Theory, Culture Epoch Theory, Doctorate, etc.)

It is rather strange to note that, while the word 'Educationist' is not to be found in the dictionaries commonly used in this part (Oxford, Martin, etc.), and the word 'Educationalist' is every where given, the latter is not only referred to, but it has been pointed out

that 'the use of the, former (Educationalist) should be deprecated'.

The book is an indispensable guide to educationists, writers, administrators and readers too. No Training College should be without this publication, and no other educational institutions too.

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QUANTUM BOOKS :

Published by Macmillan and Company, Ltd., London. No. 1 : The Atom : by Charles Hatcher. Pages 108. Price 15 s.

No. 2 : Space Around Us; by Leo Schneider. Pages 104. Price 15s.

No. 3 : Exploring the universe : by Leo Schneider. Pages 111. Price 15 s.

With rockets piercing the ocean of space around us it is but obvious that everyone's interest, including that of teenagers, is aroused to know more about the new discoveries of science that is uniting-and dividing too—the world. The books mentioned above are informative, stimulating for school and college-going students and their reading would surely infuse in many a spirit of adventure and discovery. Even laymen will find them absorbing.

Charles Hatcher has very lucidly 'uncovered' the Atom, detached it, named its components and has finally thrown a challenge to the readers assuring them that 'the really important discoveries are yet to be made'. He really captivates the reader's interest till the end.

The last two books by Leo Schneider are no doubt written in an interesting style but there is a feeling of disconnectedness in the narration. In the book, 'Space Around Us' the

author has described the solar system and the stars in space, while in the other book 'Exploring the Universe' he describes the tools of the Astronomer and space crafts used for exploration.

All the three books rightly boast of very attractive and accurate photographs, and coloured illustrations. They offer a clear and thorough account of each particular topic that add to the value of these books which make Science 'a thing of beauty and a joy for ever'.

G. Y. D.

* * *

BEGINNING TO TEACH ENGLISH

By D. C. Miller. published by Oxford University Press, Oxford House, Apollo Bunder, Bombay—1. 201 pp. Price 6 s. 6d.

The purpose of this book is to help teachers of English under Training as well as the Trained ones who wish to give a proper start to pupils beginning to learn English. The book contains twenty-five chapters combining theory and practice of foreign language teaching. The author believes that theory and practice cannot be treated separately without loss to each. In this book they have, therefore, been given together. The lesson plans illustrate the theory, while the theory chapters explain the plans.

Oral work, especially in the earlier stages of teaching English, occupies a very important place. The Pre-Reader Stage which extends over a period of six to eight weeks is found to be a very difficult job even by the experienced teachers. The author has tried to give very practical guidance to such teachers by providing a set of fifty oral lesson plans. The detailed lesson notes, the writer observes rightly, are not to be followed slavishly. He expects good teachers to adopt them freely to meet the needs of his pupils in accordance with the general ideas of language

teaching which are discussed in 'theory' chapters.

The lesson plans reveal the author's wide experience as well as skill in giving a good start to pupils, beginning to learn English. The suggestions and advice given by him in this book deserve to be assiduously followed. Each lesson plan includes the following headings. 1. Things to be used. (teaching aids), 2. Sentence pattern to be introduced, 3. Drill work, 4. Commands, and 5. Sounds and letters. The Drill work consists of listening, doing, and saying. The special feature of this book is the importance given to intonation which is the name given to the study and use of tones. Intonation, like pronunciation, is best learnt by imitation.

The writer has followed what Palmer calls the multiple line of approach. The present syllabus in English recommends the structural approach which forbids the use of commands and questions. This, however, in no way lessens the value of the book. The sound treatment of important structural is one of the best features of this book. The appendices contain (1) a list of exercises occurring in the listening, doing and saying (2) a set of teaching aids, (3) a word list, (4) index to theory chapters.

The fifty lessons plans will be found to contain, at least, material enough that can be taught easily in two months. The book has been well got-up. It caters to the needs of a very valuable and important stage in the teaching of English. The book should really interest teachers of English who often find themselves at sea when they have to face a class of beginners every year. There are some very minor blemishes, but, apart from them, the book is excellent for the purpose which it aims at achieving.

V. S. B.

जीवन-शिक्षण

By Dr. Parasnis (Bombay) and Dr. Ambekar (Ahmednagar). Published by Orient Longmans Ltd. Bombay I.378 pp. - Price Rs. 5/—

This book deals comprehensively with the subject of Education, its theory and practice, though it is mainly designed to meet the needs of the teacher—trainees in Training colleges. Written by well-known educationists who have rich experience to their credit, this well-planned book has certainly a high standard and an intrinsic value, and hence is a valuable addition to educational literature in Marathi.

The book is divided into three parts, each forming an important unit in itself, the authors all the while aiming at coordination and consistency and keeping in view the basic principles of Education. Part I deals with the Objectives of Education, Educational Psychology, Stages of Development and allied topics. Part II treats of School Administration, Basic Education, Examinations and General Syllabus; while Part III relates to Lessons Planning, Study of various subjects and different Types of schools.

It is not possible here to refer, even in passing, to the important points stressed and discussed in these parts and to show how the needed information is offered in an intelligible and yet intelligent style, and in a simple language. The questions given at the end of each chapter are really testing and prove a guide to study.

In short, it can be said that here is a book that reveals scholarship, coupled with practical insight, a wide perspective with a background of due proportion and up-to-date information regarding the subjects treated therein. Particularly illuminating are the chapters on ऐतिहासिक. पार्व-भूमि, मूलतत्त्वे, etc.. Of course, on rare

occasions, one feels that one is reading 'translated matter', which is, in such books, sometimes inevitable.

We have no hesitation in recommending the book as a Text-book to be used in Training colleges and also as a reference-book to Primary and Secondary schools where Marathi medium is used.

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We have to acknowledge with thanks the receipt of the following publications:—

(i) (a) Terracota : Glass, Sand and Stone (Experience with Materials : Book II). by W. D. Nicol. 96 pp. Price 16 s.

(b) Committee Procedure for Clubs and Voluntary Organizations (Practical Books): by Peter Du Santoy. 44 pp. Price Is. 10 d.

Published by Oxford University Press (London), Oxford House, Bombay—1.

(ii) Suggestions for the Teaching of Social Studies : By B. D. Shaida. Published by Punjab Kitab Ghar (Regd.) Jullundur. 202 pp. Price Rs. 6.50/—

(iv) Indian Recorder and Digest (Monthly Digest of Events). Edited and Published by Dr. H. N. Bali on behalf of the Diwachanda Institute of National Affairs, 3 Phirozshah Road, New Delhi I. Annual subscription Rs. 12/—

(v) शिक्षण-विचार (Ist Part) by G. M. Dabholkar. Published by Orient Longmans Ltd. Nicol Road, Bombay 2. 352 pp.. Price Rs. 5/-

(vi) Swami Vivekanandha and America : Editor Gupta Ambica. Published by United States Information Services, Shikandra Road, New Delhi I.

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Space prevents us from acknowledging the receipt of other publications, for which we are sorry.

Editors

EDITORIAL NOTES

Madras Government and Secondary Education

It is reliably reported that the Madras Government, as recently announced by the Chief Minister of that State, has decided to make Secondary education free to all from the new academic year and that some other States seriously intend to follow its example, a progressive step certainly welcome in the interest of education. While realising the importance of this decision on the part of the State, we would like to offer a few remarks concerning its future working and, in a way, sound a note of caution based on the experience of such Schemes on the part of the State Governments, which are, as some are led to think, undertaken to win popularity or for prestige and political propaganda.

Other Problems facing the States

It is certainly necessary, before launching the Scheme (where it has not been introduced), to thoroughly visualise the implications resulting from it and to make due provisions for meeting them satisfactorily. Already there are some serious problems demanding immediate solutions throughout the land—those of the shortage of teachers, paucity of equipment, unsatisfactory sanitation and the deterioration of quality in schools and colleges. Though scope for academic training is wide enough in many States, there is still inadequate provision made for Technical education. Increase in the number of school-going children, with little guidance of the right type, offered or available, has largely led to the fostering of indiscipline and frustration too that sometimes express themselves in violence and defiance of authority. Above all, there is the problem of finance which is the headache of administrators and other authorities. So far as one can see, there is inadequate provision made in the Central budget for the needed help to the States. Though Technical education is promised a large share, still much cannot be expected of the Educational budget of the Central, which is already a 'weak-knee'd' one. One cannot also be blind to the grim fact that in the present state of emergency, to expect more even from the Central Government, faced with the task of providing for defence and development, would not be reasonable.

First Things First

In view of these considerations, we would like to suggest that the funds available should be better utilised for opening technical schools offering different courses, as well as for creating a suitable machinery for the guidance of students. This should be done in consultation, if convenient, with educational Bodies or Associations that should come forward to offer this help. We should not be misunderstood if we suggest that,

instead of 'rushing in', State Governments should first chalk out a thoroughly thought-out plan, and carry it out slowly, steadily and sincerely. Things that deserve priority might not be set aside, for the sake of mere publicity or imitation, and new schemes undertaken without full considerations of their implications and future developments. We think that instructions in Technical courses be made available in many—and at various—places to as many students as possible who should be trained therein to fulfil their destiny as workers in and helpers to, the economic and socio-cultural richness of the land, which is the sore need of the day.

* * * *

Believe it or not [*Spare the teacher and spoil the school?*]

It is reported that the 'award' of punishment to 900 school teachers for the poor results of their schools during 1963-64 has increased the efficiency of teaching in the State of Punjab. The Government of that State which probably thinks that 'punishment is justice for the unjust' now proposes to extend this system to colleges in the near future. If this is a correct picture, then it can be argued by many that other States would do well to study this 'novel' Punjab experiment to raise the standard of education. This announcement that was made by that Government in the Assembly raises a number of questions: (1) How was the inefficiency of the teacher determined? (2) What directions was he given? (3) How is it that he made good his inefficiency within such a short period? (4) Did the Education Department of the Punjab State convince itself that better results shown by the teachers were really genuine? (5) What is the correlation between the improved results of internal examinations and those of public examinations? (6) What are the findings of the Education Department in this novel experiment? etc.. We would urge the Punjab Government to give wide publicity to all these pertinent details about this experiment so that teachers all over India, and particularly administrators, would be benefited by the result of this experiment, in case it has really proved to be such a helpful one.

Rather an Over-painted picture

Secondly, another question poses itself in this regard. If the experiment, as it is reported, happens to be reliable, we have to concede to the impalatable truth that shirkers among teachers are entirely responsible for the poor results of pupils entrusted to their care. This will prove a sad commentary on the Code of Conduct followed by the teaching profession, some members of which are, of course, bound to err, being human. The picture, however, is likely to be over-painted and much ado made of trifling cases. Secondly, as Horace Mann puts it, the object of punishment is in many a case the prevention of evil and it can never

be made impulsive to good. We would, therefore, suggest Teachers' organisations, particularly those of that State, to go deep into the whole question, with a view to accepting what would be found really worthwhile and to show how a few cases here and there do not entitle one to take final steps or to arrive at some definite conclusions. In our opinion, it is the duty of the Associations to look carefully into such reported cases, to thoroughly investigate and to see that the profession is not unduly criticised and lowered in the estimation of the public.

Secondly, in education the quality of efficiency cannot be 'strained.' Efficiency that springs from force or fear is only frail and fickle. Progress of education is based on spontaneous and sincere co-operation of all the agencies concerned.

* * * *

Eminent Primary teachers and indifferent local authorities

A wholesome tradition has been rightly established by 'awards' that are sanctioned to Primary teachers, as recognition of their services in the field of education. However, it can be safely said that what they are offered for their meritorious services is a poor recognition—a certificate, a 2nd class journey to Delhi and Rs. 500/-, though we are fully aware that such services cannot be rightly or rather fully awarded, except in the encouragement or the inspiration they give to other workers in the field and to the students and the public they come in contact with.

When the Centre and State Govts. have 'discovered' such eminent teachers, local authorities should come forward to honour them rightly and fully, as one of their responsible duties. In fact, it is they who should 'discover' such teachers first and 'present' them to the State Government as well as to the Central one. Some substantial financial help that would enable the Primary teacher to carry on his work undisturbed, for at least some years, would be a proper recognition of such services that, besides imparting education, help rural uplift, would stimulate him and others too to put in better work and serve the cause more effectively. It is certainly the primary function of such authorities to encourage local teachers, and, award or no award, all workers should be rightly honoured and even financially helped. In what way this should be done will certainly depend upon local conditions. Of course, it is necessary that proper machinery for selection endowed with definite powers should be established that would be above suspicion and uncontrolled by local authorities, interested parties or political leaders of the place. We are aware that real educational work is its own reward: however, public recognition and that too in a way that would facilitate its imparting is equally rewarding and stimulating too.

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