

https://dspace.org/

Editorial: Fear of the unknown

Rose, Brian Waldron

1963
Johannesburg College of Education
https://hdl.handle.net/10539/25553
Rose, B.W. (1962/1963). Editorial: Fear of the unknown. Symposium: A Journal for Education in Southern Africa, pp. 5-6.

Downloaded from a DSpace repository. https://dspace.org/

Editorial

FEAR *of* THE UNKNOWN

THE reader will notice in this issue of "Symposium" an article on *Teaching Machines,* which was specially written for this occasion. Entirely factual, it outlines the growth of this most interesting approach to teaching, summing up without prejudice the advantages and limitations of this particular sort of mechanical device.

The authors point out that the machine necessitates a programme designed by an educationist; this programme can be built up only after the most careful analysis of the skills and structures involved in the area to be taught. Mechanised teaching aids, far from reducing education to an *Orwell 1984* world of sub-humanity may in fact force us to examine the whole educational process down to the very grass roots, to sweep away much romantic litter and finally to reassess many of our procedures. If the process reaffirms the ultimate value of our traditional approaches, so much the better. If it does not, no honest teacher would wish for a moment to continue longer with procedures outmoded or ineffective.

Teaching machines, varying in price from a few pounds to several hundreds of pounds, are already being marketed. Like early wireless sets, they will doubtless improve with use, and in time we shall look with some comic astonishment at the primitive models which today seem so advanced and excellent. Certainly it is clear that they are most helpful in subjects of high factual value; or, put negatively, in subjects of low content of value judgments. Arithmetic can be learned with greatly increased facility by the aid of these machines. It is possible that on such a subject as tree pruning, for example, the teaching machine would function at a very high degree of success, whereas in teaching literature it would tend to get into difficulties as soon as the programme passed from mere content (The writer of Alice in Wonderland' was: Conrad, Cornelius, Hemingway, Carroll) to subtleties of appreciation involving values. And it is likewise in handling the spoken language rather than the written (where intonation, tunes, nuances of stress and accent are so important) that the machine has to surrender to the living teacher.

The authors are correct in pointing to the immense educational importance of reinforcement—one of the very few (but in this case, entirely necessary) moments of jargon in their survey. Reinforcement is a technical term covering the reward (positive reinforcement) or punishment (negative reinforcement) which results from a response in the learning situation. For instance, a pupil attempts five sums in arithmetic. The teacher marks them the following day, and the child then has the satisfaction of finding that he has all the sums right. That satisfaction is rewarding to him, as is the teacher's praise. This is posititive reinforcement. But so often in our crowded schools with their overloaded schedules, it may be a week or more before the teacher gets round to marking the arithmetic. A large time gap between the pupil's response and reinforcement is very unsatisfactory in the over-all learning process. The teaching machine provides reinforcement within seconds of the pupil response—in the sense that the pupil is informed mechanically whether his response is right or wrong.

This rapid mechanical response not only reduces correction time and promotes in the pupil new attitudes educationally highly desirable, but it clearly holds possibilities of reducing considerably much of the drudgery of the learning process. No experienced teacher would, we feel, deny that repetitious drudgery is inevitably involved in a great deal of learning. Spelling, arithmetical tables, Latin conjugations, foreign language idioms and so forth, all seem to involve endless practice, a constant stamping in of general pattern by repeated individual variation. Just as the domestic chores of nursing have in the past made that profession unattractive to prospective entrants of superior intelligence and ability, so the constant nag of corrections and the unavoidably repetitious nature of much teaching has tended to alienate prospective teachers of considerable ability. Indeed, it would not be unreasonable to suggest that a major aspect of any modern 'inspection' is the investigation of the teacher's control of this tiresome area. It seems most possible that these machines may in time remove from the teacher a great deal of this drudgery, freeing him for the more creative aspect of his profession. Far from being suspicious of this infant technology, teachers should welcome it.

A highly conservative profession, more regulated by deeply seated community patterns than it likes to acknowledge, teaching today shows two interesting trends. Firstly, there is a growing breakdown

between the traditional approach and the needs of the modern world, which has so far led to little more than a botching and patching; and secondly there are increasing signs of a technological revolution in education which may within the next quarter of a century entirely outdate our present approaches and cause us to reorientate both our thinking and our techniques. And though mere change is not necessarily change for the better, most thinking teachers are agreed that a major overhaul is overdue.

Science teaching, under the revolutionary changes of atomic research, is rapidly changing. A failure to accomplish educational reorganisation in this vector might well result in a complete loss of impetus in major research and the subsequent loss of international leadership. In the same way the teaching of mathematics has been considerably reorientated in the last decade. The international position of English is slowly compelling educationists to turn from a study of higher literature to a study of language as a communication—a function that English performs in India and Africa. Over half the school children in modern Russia learn English as their major second language today. Quite clearly second language teaching techniques may well be influenced by mechanical aids. The analysis of frequencies, of structures, of presentation orders and so forth, necessary before a programme can even be designed for mechanical presentation, must ultimately have a beneficial effect on our work.

At the University of the Witwatersrand mechanical aids are being used most effectively in an experimental approach to the teaching of foreign languages as well as in the presentation of Bantu languages. Trained observers who have returned from the United States, where there is a huge language problem involving hundreds of thousands of European immigrants who must learn English as rapidly as possible in order to qualify for citizenship, report the fantastic success of mechanised methods. One informant said that a group of Italians had reduced the time taken to learn enough formal English to get round, *to one tenth of that taken by conservative methods*. The speed and retention involved here are almost unbelievable. The programme, built up largely at Columbia University, and in a slightly different area at Harvard, harnesses both human and mechanised teaching.

It is understood that the newly formed English Academy of Southern Africa is investigating mechanical teaching aids in its approach to the important problem of raising the standards of English among Africans. The possibility of promoting some form of endowed institution assembled on the most modern lines is an attractive one, and we feel sure that the Academy will command wide sympathy and support. Experts closely in touch with African employment in industry and commerce know how important language is as a means of communication, how costly its faulty usage can prove, how frequently loss of life and reduction in labour productivity can be traced directly to a breakdown in communication between management and employees. The national cost of faulty communication must run into tens of millions of rands a year —if not a great deal more. No doubt the Academy will in good time present its case to leading industrialists and to international organisations interested in this vital area of human endeavour. When this is done, we have no doubt that the approach will be met by intelligent co-operation.

Early in 1963 the *Symposium Group* intends to hold a week-end conference on teaching machines and mechanised aids generally. By that time it is hoped that various firms about to begin trading in Africa will have samples of their wares available for demonstration. Several prominent educationists have been overseas recently and have returned with first-hand experience of American and British developments, and as many of these people as possible will be invited to speak at the *Symposium Conference*. We believe, in fact, that this is not only a matter of general importance to us all, but something that may well prove to be of the greatest influence on educational direction.

Readers who are interested in attending the conference when it materialises should write to the Secretary, The Symposium Group, P.O. Box 1013, Johannesburg.

With the Compliments

of

REUNERT and LENZ LTD., ENGINEERS

◆

REUNERT HOUSE, ANDERSON ST.
JOHANNESBURG