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## Use of the New Type Examinations

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varying degree, depending upon the magnitude of its difference in the different situations. Under ordinary conditions, except when the sound source is in the median plane, one ear is always nearer the source than the other, which means that there is always, under such conditions, a phase, a temporal and an intensive difference at the ears. Under such conditions it seems unreasonable to assume that the organs of hearing analyze the stimuli and respond to a single factor. Directional localization is a cortical function, an immediate, unanalyzable experience in the sense that the "effects" of the different stimuli cannot be identified. The organs of hearing serve as mediating agencies for transmitting to the central nervous system the effects corresponding to the difference in the stimuli.

According to this hypothesis no single one of the physical factors in question predominates, in the absolute sense, in determining directional perception under ordinary conditions. Nor are such factors reducible to one, except as they contribute to a common difference-pattern. The directional localization of a sound source, under the ordinary conditions of hearing, depends upon the configurational nature of the cortical effects that correspond to the physical "difference-pattern" at the ears.

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## USE OF THE NEW TYPE EXAMINATIONS

B. F. ZUEHL

A study was made of the value of the new type examinations in classes aggregating 64 students, of whom 28 were Juniors and 36 were Sophomores in the College of Liberal Arts of Western Union College. Four of the eight forms of new type questions were used as described by Paterson. (See Preparation and Use of New-Type Examinations, by Paterson, pages 14 to 41.) The four used were:

- (1) Single word completion (Recall type).
- (2) Several words or clauses necessary for completion (Recall).
- (3) Best of three alternative answers (Recognition).
- (4) True and false (Recognition).

Two plans were followed in preparing lists of questions, i.e., by the students and by the teachers. The former were prepared as class assignments, were collected by the teachers and as far as time would permit were used in testing the classes; this was followed by class discussions, questions and criticisms by students and teacher. The questions prepared by the teacher were used in place of the traditional monthly "quiz."

All the students had been rated when entering as Freshmen on the basis of scores earned in the Terman Group Test; they were also rated according to the per hour honor points earned during attendance at college; each of these ratings was then compared with the results obtained with the use of the new type examination questions. This study was carried on thirty weeks. It was assumed that the per hour honor points earned made the best direct measure of the teacher's estimate of the quality of work done by each student. The men were practically equal in number to the women and no significant difference as to quality of work was discovered.

The results obtained by using the new type examinations were derived from two sources, first the teacher's estimate of the original preparation of questions by the students and secondly from the scores in monthly new-type examinations.

An analysis of the questions prepared by students was made by the teacher in each case, supplementing the observations made in class discussions. The analysis showed several tendencies as follows: The superior students succeeded best in preparing thought questions. Their questions when used in class aroused favorable reactions by the class as a whole. Inferior students made their questions too easy, some were ambiguous and others permitted several answers. Practically all the students failed to distribute their questions so that they would obtain a fair sampling of all the material or subject matter to be reviewed.

The highest correlation was obtained between per-hour honor points and monthly scores earned in the teacher's new type examinations, this being  $r = .69 \pm .08$ . The comparison of Freshman ranking by Terman's Group Test with the scores earned in the new-type examinations was considerable lower, it being  $r = .58 \pm .09$ . These comparisons must allow for the difference between what a student can do and what he will do.

Some conclusions may be noted; The new-type examination being very objective is easily scored and saves time for the teacher. Four teachers evaluated the four forms of new-type questions as follows: The best answer, being a recognition test, was rated as best for general examination purposes. Next was the one-word completion form, the next was the several words or clauses, and the poorest was the true and false. No comparison was made between the new-type and the traditional type of examinations.

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