

1927

The Mode of Vibration of the Human Vocal Cords

Wolfgang Metzger
State University of Iowa

Let us know how access to this document benefits you

Copyright ©1927 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Metzger, Wolfgang (1927) "The Mode of Vibration of the Human Vocal Cords," *Proceedings of the Iowa Academy of Science*, 34(1), 300-301.

Available at: <https://scholarworks.uni.edu/pias/vol34/iss1/95>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

the practice on carrying the digit 1, so that a preferred response of carrying one is apt to be established in such a way as to interfere with the carrying of other digits.

5. The Placement of Drill Units in the Text. It has been common practice for texts to give all their drill in about three places in the book, bunching it up especially in the beginning and the end of the books. This violates the principle given under number one above, and tends to tire the pupils beyond measure when any attempt is made to use the drill as given. This custom accounts for the 90-page gaps with no drill mentioned above. This means that as much as half the year may lapse with no drill on the basic combinations.

6. Arrangement of Examples within Drill Units in Order of Difficulty. Arranging examples in order of difficulty is a principle now well established in text construction, and probably applies as well to review drills for maintaining skills. None of the six texts analysed contained this feature.

7. The Use of Standards With Drill Work. Awareness of success and failure at the time of learning is probably the greatest single motivator which can at the present time be used on a wide scale. Several texts now contain drills which have been standardized, but most of them are of the single standard type, such as "Get 10 examples right in six minutes." This sort of standard is apt to work harm because bright pupils may come up to it without any effort while it may be too high for dull pupils. A varied standard with six to ten different ratings according to different ranges of accomplishment is to be preferred to the single standard type.

8. Use of Mixed versus Isolated Drills. The tendency still prevails to give isolated drills on one function separately from all other functions. This is not the way the functions occur either in verbal problems or in actual life situations.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

THE MODE OF VIBRATION OF THE HUMAN VOCAL CORDS

WOLFGANG METZGER

Observation: Some of the models of the larynx used since the experiments of Johannes Mueller (when observed through the stroboscope) show transverse and alternate vibration.

The question arises as to whether this is the mode of vibration

of the real vocal cords, or whether they rather vibrate synchronously and more in the lateral than in the transverse direction, as was assumed before.

A. Results of the experiments with models:

1. Alternate vibration occurs only when the slit is formed by flat membranes with sharp edges; it does not occur when the slit is formed by rounded lip-shaped folds.

2. Even with the mentioned flat membranes the alternate vibration occurs only when they are fastened in an angle of about 180 degrees; it does not occur at any other angle.

3. Even if both of the mentioned conditions are fulfilled, the alternate vibration occurs only when the two membranes are out of tune, that is, when their tensions are not equal; only very thin membranes can not be tuned exactly enough, so that in this case the previously mentioned conditions are practically favorable to alternate vibration.

B. Results of the observations of the human larynx:

The vocal cords of the human larynx have not the shape of flat membranes but of rounded lips. The average angle between them is far from being 180 degrees. Even if they, by some physiological asymmetry, have not exactly the same tension, their vibrations therefore can physically not be alternate but must be synchronous.

STATE UNIVERSITY OF IOWA,

IOWA CITY, IOWA.

STUDY METHODS OF COLLEGE STUDENTS IN RELATION TO INTELLIGENCE AND ACHIEVEMENT

NIRA M. KLISE

This paper is an account of methods used in study by approximately 500 students at Iowa State College. The questionnaire method was used, and in the paper results obtained from students in both the highest and lowest fourth of the entire group in intelligence rating, are compared.

The following are tentative conclusions as to the relation between methods of study in college and intelligence and achievement:

1. *The relation of study methods to intelligence.*

- (a) Although students in the highest fourth of the college in intelligence are six times as likely to rank in the highest fourth in scholarship as students in the lowest fourth in