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Aniseh Hanania

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**EFFECT OF FEEDBACK ON STATE ANXIETY AND PERFORMANCE WHILE
LEARNING ARABIC VOCABULARY THROUGH COMPUTER ASSISTED INSTRUCTION**

by
Aniseh Hanania

This study determined whether positive or negative feedback on Computer Assisted Instruction (CAI) exercises in Arabic vocabulary affected performance and anxiety

How learning is affected by anxiety has been hypothesized from drive theory (Spence, 1959, Taylor, 1956) and from trait-state anxiety theory (Spielberger, 1966; Sarason, 1975; Tobias and Hendle, 1972; Newmark, Wheeler, Newmark and Stabler, 1975). Drive theory predicts that the performance of low anxiety subjects will be superior to that of high-anxiety subjects on complex or difficult learning tasks. In contrast, it is expected that high-anxious subjects will perform better than low-anxious subjects

In order to see the effect of trait-state anxiety theory on learning, it is important to distinguish between anxiety as a temporary state and as a stable personality trait. State anxiety (A-State) refers to a complex condition that fluctuates over time in response to various stimuli. Trait anxiety (A-Trait) refers to individual differences in anxiety proneness and is a stable personality characteristic

Harold O'Neil's study in 1972, where he used negative and neutral feedback, did not support the drive theory that the earlier study did. O'Neil believes that the results could have differed because his study used females and the earlier study used males

In addition to an explication of drive theory, and type of feedback, etc., it would be well also to discuss the need for materials in the teaching of Arabic. While this sort of study could have been conducted with problems of mathematics or history etc., it was found that there was a major gap in materials as far as teaching Arabic vocabulary is concerned, notably in the area of CAI. There is a need to present vocabulary directly, to do so in Arabic, if possible, to have it available on the micro-computer.

In order to answer the research question about the effects of feedback (1) on anxiety and (2) on performance while learning Arabic vocabulary through computer assisted instruction, the following research was designed. Three forms of Arabic vocabulary exercises were administered to sixty Arabic language university students (Brigham Young University and University of Utah). There were 36 males and 24 females. Their ages ranged from 17 to 52 with the average age of 25. Utilizing pretest results, a matched pair procedure divided the students into two groups equal in ability and comparable in terms of gender and trait anxiety level. One group received positive feedback in each of the different exercises, while the other group received negative feedback.

The CAI vocabulary exercises have been designed to teach 30 new Arabic vocabulary words. Half of the words were names of fruits and vegetables, the other half were names of animals and birds. In the first exercise the student had to choose which of the three pictures matched the Arabic word that was given. The second exercise presented three words and one picture. The student would choose which of the three Arabic words matched the picture that was given. The third exercise required matching of the English and Arabic words. Here the student had to choose which of the thirty words in one language corresponded to a given word in the other language. The first two exercises were fairly easy, and were intended to introduce the words and drill the student on them. The third exercise, matching, was the more difficult, because of the larger number of options offered.

The computer program required a correct answer for each element before the student could proceed. Also, the computer program included an algorithm to continually evaluate the student's progress and present this information to the student periodically.

The CAI program included vocabulary exercises written to conform to the two different kinds of learning situations. One group of exercises gave the students positive feedback i.e. the students were complimented whenever they did well or got a correct answer in the first or second responses. Typical feedback messages were, "excellent", "wonderful". Responses to incorrect responses on first and second trials were worded to encourage the student while advising him of his error. Typical responses were "Oops, that's not right, try again" or "Almost, next time you'll get it."

The other group of vocabulary exercises gave the student negative feedback i.e. the students were criticized whenever they gave an incorrect answer with responses such as "Others have learned it. Why can't you?" If they got the correct answer in the first trial, they were given such responses as "O.K." "Go on," or "Right. Anyone could have guessed that."

As a measure of their trait anxiety all students were administered the Alpert-Haber Achievement Anxiety Test which is considered the best test of this type by most experts. This AAT questionnaire contained 19 debilitating and facilitating test anxiety items. Responses were marked on a five-point Likert scale, rating from "almost never" to "almost always". To measure their state anxiety students were administered the Jones-Madsen Affect Questionnaire. This is a short three item state anxiety questionnaire related to each section of the vocabulary exercises.

The students were given the AAT and the pretest before doing the CAI exercises. After the CAI exercises they were given the state anxiety questionnaire and the first posttest to determine the effect of the CAI program. A week later they were given a second posttest to determine their retention.

Six analyses of co-variance and two analyses of variance were used to analyze the data collected in this study. The author also assembled some informal observations of the students' reactions and comments that were made concerning their participation in the CAI Arabic vocabulary exercises. Typical comments were "This is the only way to learn." "Is there a second part of this?" "Can we come again?" "Can we purchase this computer software?"

Even some of the students receiving negative feedback expressed appreciation for being given intermediate scores and statements regarding the significance of those scores. A few students appeared amused by the negative feedback messages. There were some students who received positive feedback that tended to ignore the feedback statements and concentrate on the task. Informal observation of the participants suggested that those who received negative feedback paid more attention to the feedback messages than did the other group.

The significant statistical findings of this study are summarized as follows:

Those receiving positive feedback did better and retained more from the instructional process than those receiving negative feedback.

The amount of state anxiety experienced during the instructional process depended on the test subject's personality characteristics, i.e. his trait anxiety.

Students who had a high level of state anxiety while doing the exercises took a little more time than the students with a low level of state anxiety.

The sex of the subject seemed to have no influence on gain, retention, or anxiety. Those who did worse took more time than those who did better.

Although these are the major findings, a word of caution is in order concerning the generalization of these findings. The conclusions stated above might not be applicable in situations where students are under greater pressure to achieve a certain standard. Likewise, their applicability might be limited where students are engaged in any other language learning activity.

The data concerning a few of the important questions failed to show statistical significance. For example, the reaction to feedback treatment was expected to show some dependence on trait anxiety, but this was not borne out by the data. Also, the interaction of state anxiety and feedback treatment in relation to gain was not as significant as might have been expected.

Further, researchers may wish to clarify the results of this research by including neutral feedback. If this were to be done, the research would need a larger number of subjects.

Also, researchers may want to further investigate male and female differences with regard to their respective anxiety levels. The present study did not have the necessary balance of male and female subjects to conduct a valid test of these possible differences. Researchers also would want to investigate the differences between state anxiety under conditions of positive and negative feedback where the results were crucial to the students.

While there are many aspects of the relationship among state anxiety, performance, and type of feedback in CAI language programs which still need to be investigated, the current study provides initial evidence that positive feedback contributes significantly more to learning effectiveness and retention than negative feedback and that further research would be worthwhile to improve and enhance the positive feedback methods.