

Note Taking Strategy and Recall

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This study examined the effect of notetaking strategy and review on recall of prose. One hundred and fifty class five (final year) students of two secondary schools in Osogbo were randomly assigned to one of the 5 experimental notetaking conditions adopted. There were 2 review conditions and these recall measures are: free recall and delayed recall test. T-test, one way ANOVA, 2x2 ANOVA, correlational analysis were the statistics used to analyze data collected. Results of the analyses showed that paraphrased notetaking was a more effective strategy in causing recall of prose material than verbatim notetaking. Also it was discovered that notetakers who reviewed performed significantly better than on free recall than note takers who did not review. Implications of the study for the teachers, educational psychologist and the guidance counsellor were then discussed.

Introduction

Educational researchers continue to show increased interest in investigating the influence of notetaking on recall of learned material. This is because notetaking is rapidly assuming a vital role as a significant study tool in learning. Success in schools today call for the learners ability to learn from lecture, prose or written material and adequately retrieve such from memory, when necessary. Moreover, the current cry of a falling standard of education and the rapid rate at which students engage in examination malpractice in Nigeria, certainly calls for an assessment of the teaching-learning process of school. Notetaking and reviewing, which are significant factors (amongst others) influencing learning need to be given attention.

There have been mixed evidence derived from experimental studies on the functions of notes. Certain studies reported that notetaking facilitates learning (Crawford, 1925; Howe 1970; Di Vesta and Gray, 1973; Aiken, Thomas and Sheum 1975). In particular, Di Vesta and Gray (1972) reported that notetaking serves one or two function: an encoding and an external memory function. In serving as an encoding device, notetaking aids the learner in transcribing information received into meaningful concepts, while as an external memory device, it provides the learner with a resource for further study. Thus, notetaking is facilitative to learning. On the other hand, some studies show that notetaking interferes with attention and subsequent recall (Ash and Carlton, 1953; Freyberg, 1956, Peter, 1972) or that it perform no significant function in learning (Jones, 1923,

McCleandon, 1958, Eisner and Rhode, 1959).

On note-reviewing and recall, available studies either support reviewing as facilitative (Di Vesta and Gray, 1972; Freyberg, 1956, Ausubel, 1966, Kardash and Kroeker, 1989, Carter and Matre, 1957) or that reviewing has no effect on learning (Fisher and Harris, 1974; King, 1992).

One major factor that greatly accounts for these differences among results of the studies is the researcher's failure to adequately control learner's activities in the different experimental conditions. Subjects tend to give inaccurate response when instructions given them are not clear. For instance, in a situation where subjects were merely asked to take notes without any further guidance, the activities of subjects in that group would vary considerably. Researchers (Howe, 1970; Fisher and Harris, 1973, Hartley and Marshall, 1974) deemed it necessary to investigate what learners actually do in the process of notetaking. Howe (1970), found a significant positive correlation between the 'efficiency' of notes and subsequent recall. Also, Hartley and Marshall (1974) suggested that 'good' notetaking should be encouraged, when they found that test scores of 'good' notetakers was significantly superior to that of 'poor' notetakers, after a period of review. However, Fisher and Harris (1973), reported no significant correlation between efficiency of notes and subsequent recall. They found that those who reviewed their notes did significantly better on recall tests than those who reviewed lecturers' note.

If notetaking thus has an effect on recall as shown by available researchers, it becomes necessary to divert attention to analyzing notetaking procedure and training in notetaking skill, towards obtaining optimum result. Therefore, the present study was aimed at investigating the relative effectiveness of various notetaking strategies (namely, verbatim and paraphrased), with a view to making students learn the more effective strategy in the recall of prose. This study attempted to find out whether paraphrased notetakers would retain ideas more accurately than subjects who record notes verbatim. The effect of review on recall was also considered.

Method

Subjects. One hundred and fifty (150) form five (final year, students from 2 secondary schools in Osogbo Local government area of Oyo state served as subjects. Subjects were randomly assigned to 5 experimental conditions, with an equal number of subjects in each group. The 20-minute recorded passage was extracted from a forty five English language textbook titled "The Danger of Armed Robbery", by M.O. Aka. The passage contained 1,001 words and 24 idea units. (By idea unit is meant an idea that gives information about the people passage, be it a word or phrase).

Procedure. There were two notetaking conditions and two review

conditions. The note taking groups (Group 1-4) either took notes putting down relevant points only paraphrased notetakers (2 groups) or took notes word-for-word-verbatim notetakers (2 groups). A non-notetaking group (Group 5) served as control. The two review conditions were mental review and note-review.

The five treatment conditions were:

1. Ss took notes verbatim and reviewed own notes (NV-RON);
2. Ss took notes verbatim and reviewed mentally (NV-MR);
3. Ss paraphrased notes and reviewed own notes (NP-RON);
4. Ss paraphrased notes and reviewed mentally (NP-Mr);
5. Ss took no notes and reviewed mentally (NN-MR).

Five packets were compiled according to experimental conditions and randomly distributed to subjects. The packets contained instructions about the notetaking and review procedures. Subjects were instructed not to make any verbal communication during presentation of the recorded passage, nor to write on other writing materials except in the booklet. Following presentation and review or mental review period, all subjects were tested for free call and short term objective test, consisting of 10 multiple and 3 short answer test items. Three (3) weeks later, the objective test was re-administered as a measure of long term recall.

All test items were scored using the idea units drawn from the passage. Words or phrases similar to the idea units were scored as correct. A sample of 20 recalls was randomly selected and scored by a second blind scorer (trained in the training procedure). An inter-scorer reliability coefficient of 0,95 was produced.

Results

For all recall measures, paraphrased notetakers recalled more information than verbatim notetakers as shown by the mean scores in Table 1.

Table 1

Means and standard deviations: free recall

	Mean	S.D.	N
Review	6.3	2.9	60
Mental Review	5.7	2.5	60

Significant differences were also found between paraphrased and verbatim notetaking, for immediate objective test ($t = 2.29$, $df = 58$, $p < .05$) for delayed objective test.

Furthermore, the use of a 2x2 ANOVA yielded a significant main effect for notetaking strategy [$F(1/870) = 66.42$; $p < 0.05$] as indicated in Table 2. The notetaking and review interaction effect was not significant for free recall. This suggests that the difference between verbatim and paraphrased on the review strategy

employed.

Further analyses using 3 one-way ANOVAs indicated significant differences among the means of subjects who recorded notes verbatim, who paraphrased notes and those not allowed to take notes [$F(2/87) = 6.60$; $p < .05$) - free recall]; $F(2/87) = 8.66$; $p < .05$. immediate objective test; $F(2/87) = 4.91$; $p < .05$) - delayed test].

Table 2

Two-way ANOVA summary table: free recall

Source of Variation	SS	df	MS	F
A Notetaking Strategy	168.04	1	168.04	66.42
B Review	10.80	1	10.80	4.27
AXB	6.53	1	6.53	2.58
Error: Within	2197.6	870	2.53	-

* $p < .05$

In comparison, verbatim notetakers had a lower mean score than non-notetakers (4.3 vs. 5.4). This suggests the tendency of non-notetakers recalling more information than verbatim notetakers. Even though t-test showed no significant difference between the 2 groups for free recall and for other recall measures, the result was not expected. Possible explanation would be given for this in the discussion section.

On note-reviewing, a 2-way ANOVA showed a significant difference between note - reviewers and mental reviewers ($F(1/870) = 4.27$, $p < .05$) for free mental recall. Also the mean score of subjects who reviewed notes (Mean = 6.3) was higher than that of subjects who did not review their notes (mental reviewers) (Mean = 5.7). This finding suggests that subjects who reviewed notes recalled materials better from memory than those who did not review their notes.

Generally, the results suggest that the notetaking strategy employed by a subject has a significant effect on recall, and that paraphrased notetaking (or even no-notetaking in facilitating recall. Also, that review plays a significant role in recall.

Discussion and Conclusion

The results of this study indicate that the notetaking strategy employed by a learner influences his ability to recall the material from memory. Paraphrased note takers, it appears, were able to use their cognitive processes in transforming information heard into meaningful codes (that is, into their own words). Whereas Verbatim notetakers merely reproduced information heard, word-for-word, leaving no room for coding. Again, recording points -only in

notetaking seems to allow for a consolidation period. According to Hebb (1966) and Howe (1970) this period encourages rehearsal or coding while listening to an instructional material leading to, better storage in memory. Thus, it can be inferred that paraphrased notetakers allowed for a consolidation period while verbatim notetaking group provided no room for that. At the same time, the results shows that verbatim notetakers recorded inadequate information in their notes. Most likely, this impaired encoding and subsequent recall. It follows therefore, that paraphrased notetaking has a greater facilitating effect on recall, than verbatim notetaking.

the significant difference found among paraphrased, verbatim and non-notetakers further supports the superiority of paraphrased notetaking over other notetaking strategies, even in long-term recall.

However, the finding that verbatim notetakers did not perform significantly better than non-notetakers was unpredicted. Possible explanations for this are offered as follows. Verbatim notetakers apparently had no time for coding (or a consolidation period), did they pay attention to the very important ideas. They also recorded fewer (or in adequate) points in their notes missing some vital statements. Whereas, it has been found that an idea recorded in notes stands a better chance of being recalled than one not formerly recorded (Bretzing & Kulhavy, 1981; Howe, 1970). This line of reasoning reveals that verbatim notetakers were unable to take advantage of the encoding function of notes; they were more or less in the same category as those who took no notes.

The results of the review and mental review groups give support to the external memory function of notetaking. That note reviewers performed significantly better than those who did not review on free recall test, is indicative of the fact that note-takers who reviewed derived benefit from both functions of notetaking; while those who did not review were unable to make use of notes as a memory aid. Apparently, learners who reviewed their notes had extra learning opportunity, since they were able to rehearse information contained in the prose passage directly. This finding is supportive of Fisher and Harris's (1973) study, when they found that those who reviewed their notes recalled more ideas on free - recall measure than those permitted only to listen.

Generally, the findings of this study demonstrate that the external memory function of notes is effective for free recall test.

In conclusion, students should be guided or taught how to effectively take personal notes, by paraphrasing (as recommended in this study). Teachers and especially counsellors stand a better chance of stressing to students the importance of personal notetaking while listening to an instructional material. Likewise, students should be instructed to make use of the external memory function of notetaking, that is, by reviewing notes earlier taken. Therefore, these findings are of immense benefit to the Educational Psychologist, the teacher and guidance Counsellor in understanding individual learner's cognitive processes and in guiding students on improving information retrieval from memory.

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