CHAPTER II

RELEVANT LITERATURE
CHAPTER - II

RELEVANT LITERATURE

The problem in hand of the researcher directly concerns with two important main functions of testing in the motivation of learning, given as under:

First, tests conducted frequently motivate the students to study regularly so that they may be able to exhibit better results.

Secondly, the knowledge of results of the tests given frequently also motivates students and promotes learning. It enables the students to find out their erroneous performance and correct similar type of errors the next time. The sooner, the knowledge of results is given to the students, the better the performance will be shown by them as has been reported in the previous chapter.

The researcher organized the relevant literature collected by him from different books, journals and periodicals in two groups given as under:

(1) Studies carried on in India,

(2) Studies made Abroad.

(1) STUDIES CARRIED ON IN INDIA

Such studies may be divided into two categories concerning with the main objectives of the problem described below:

(A) Studies relevant to frequent testing on its result on the achievement scores of the examinees.
(B) Studies relevant to knowledge of results along with its effect on the learning outcomes when tests are held frequently.

(A) STUDIES RELEVANT TO FREQUENT TESTING:

The researcher consulted Psychological Abstracts, available Journals and other books published in India but could not find a single example in any abstract for reference to produce in favour of frequent testing and its result on the learning outcomes. The journals and the books reviewed by the researcher in this connection were as under:

1. Indian Psychological Abstracts by Indian Council of Social Science Research and Indian Psychological Association Pvt. Ltd.
4. Journals of General Psychology by The Journal Press Provincetown, Massachusetts, U.S.A.
5. A Survey of Research in Education edited by M.B. Buch, M.S. University of Baroda, Baroda (India).
6. Different books of Psychology, of different authors, some of which have been shown in Bibliography - Books further consulted.

(B) STUDIES RELEVANT TO THE KNOWLEDGE OF RESULTS:

The researcher reviewed the above noted journals and books for this fact as well. He could not find out any abstract regarding this fact in any of the books or periodicals except the
one, only one abstract published in the Psychological Abstract Volume 54(2), a monthly journal, edited by Walter S. Hunter, published by the American Psychological Association. Prince and Lemon Sts. Lancaster P.A. This is the only one study made in India.

Abstract No. 10593                Page No. 1311.
Nafde, Mrudula; (Military Hospital Psychiatric Wing, Jabalpur, India).
"Motivation in School Work"
Scientia Paedagogica Experimentalis. 1973,
Volume 10(2), 193-206.

Studied the effects of four modes of motivation on learning; knowledge of results, reward, punishment and environment.

80 male students from two institutions characterized by discipline ('A' Category) and non-discipline XXX ('C' Category) took 9 arithmetic tests to assess the four modes of motivation.

Analysis of variance and t-test results show reward, punishment, and knowledge of results were effective in motivating 'A' - but no 'C' category subjects. (French Summary) - J. Carlson.

(2) STUDIES MADE IN ABROAD

The researcher has collected many relevant studies concerning with both the objectives of the problem. He has also categorized these studies into two categories as already mentioned under 'Studies Carried on in India', page 34 and 35.

(A) Studies relevant to frequent testing and its consequence on learning outcomes of the students.
(B) Studies relevant to the knowledge of results along with its effect on the learning outcomes if tests are administered frequently.

(A) STUDIES RELEVANT TO FREQUENT TESTING:

The researcher consulted the following journals and periodicals:

1. The Journals of Experimental Psychology.
2. The Journals of Educational Psychology.
3. Psychological Bulletins.

The researcher extracted the following abstracts relevant to frequent testing from the Journals and other books of Education Psychology:

   Abstract No.852 - Jersild, A.T.
   "Examination as an aid to learning" - Journal of Educational Psychology, 1929, 20, 602-609.
   In five different experiments subjects were examined on materials entirely new to them (course material, reading, essays, biography), and then re-examined after a period of study. Equivalent control groups were not pre-examined. Pre-examination with multiple-choice and essay questions resulted in consistently higher scores for the pre-examined groups.
   It is concluded that an examination serves to aid learning in so far as it stimulates the industry of the learner.
   J.A. McGeoch (Arkansas).

Abstract No. 2034 - Monroe, W.S. and Engelhart, M.D.
"Stimulating Learning Activity" - University of Illinois
Prepares a study of motivation - L.A. Averill (Worcester
State Normal School).

Abstract No. 3978 - Turney, A.H.
"The Effect of Frequent Short Objective Tests Upon the
Achievement of College Students in Educational Psychology
School and Society, 1931, 33, 760-762.
A parallel group experiment was conducted to determine the
effect of frequent short quizzes on scholarship. One group of
students in educational psychology was given weekly quizzes,
whereas the other initially somewhat superior group took merely a
mid-term and final examination. The experimental group, inspite
of its initial handicap, was equalled the control group in final
accomplishment, at least, to the extent, that a rather comprehen-
sive series of tests could reveal this.

The students' attitude toward the programme of frequent
tests, was, in the main favorable - H.L. Koch (Chicago).

Abstract No. 6083 - Kulp, D.H., II
"Weekly Tests for Graduate Students" - School and
Society, 1933, 38, 157-159.
Once during each of 7 successive weeks, 32 graduate
students were given a brief objective examination over the assigned
readings in a course in educational psychology. A mid-term
examination covering essentially the same points as the weekly
quizzes served as a basis for dividing the class into two groups.
the highest 50% being excused from the weekly quizzes from the middle of the term on, the lowest 50% continuing under the procedure. All the students took the final examination. Whereas a marked difference in grade existed between the 'high' and the 'low' group on the mid-term examination, a small and probably insignificant one obtained with respect to grades on the final examination, the 'low' group averaging a gain of 10 points in percentile score, the 'high' group a loss of 8 points.

It is concluded that weekly tests tend to increase the amount of learning, even in a situation dealing with mature graduate students — H.L. Koch (Chicago).

Abstract No.395 — Keys, N.

The subjects were members of two sections in educational psychology, numbering 143 students each and matched for sex and initial knowledge of the material. The same tests given in the form of weekly rather than of monthly examinations result in a mean preference which is reliably higher by 12%. Retention by group tested weekly is 7% superior as tested by a comprehensive examination administered without warning from 5 to 13 weeks after the corresponding periodic tests — J.A. McGeoch (Missouri).

Gable, Sister Felicita, 1936,
Hertzberg, O.E.; Heilman, J.D.;
"Several investigations have produced results which indicate that pupils who are tested periodically, daily and at the end of each unit, make slightly higher scores on the final examination and on delayed recall tests than pupils who were not tested prior to the final examination."

    Abstract No.1677 - Johnson, B.E.
    1. Control and Experimental Groups were adequately equated.
    2. Pre-test, test, and post-test were given.
    Result: "Besides other findings, the results of this study confirm the findings of previous studies which have shown that the use of examinations stimulates achievement to a significant degree."

    Abstract No.3896 - Summer, F.C., and Brooker, N.M.
    Results: "The results of daily testing in classes in general psychology over a period of 5 years are reported in favour of a daily testing programme as providing opportunity for early prediction of term marks, for over-learning, and for enhancement of learning morale - H. Hill (Indiana)."

(Summarized) Control group of 97 subjects and Experimental group of 198 subjects received instructions and opportunities for discussion. Besides this only Experimental group was given weekly quizzes.

Result: "The effect of the weekly quizzes appears to be increased motivation, resulting in greater effort and in superior achievement." - E.B. Mallory.


I.K.B. 228


Four sections of educational psychology each of 26 subjects. Weekly quizzes were given to three sections and one section was given no quizzes.

Results: "The quizzes tended to increase achievement but the increase was lost by the end of the course." - W.E. Hall.


Abstract No.19362 - Mann, Lester, et.al.


The Academic Promise Test was administered four times at one week intervals;
"All groups continued to improve significantly in a monotonic, linear fashion, with the greatest improvement in the Numerical Test. Contrary to expectation, there were no significant interactions among previous achievement levels, pre-dispositional test anxiety levels and test trials." - D.I. Templer.

Abstract No.3636 - Marso, Ronald N. (Bowling Green State U.)

(Summarized) Maintained 116 undergraduates in 4 groups. 4 factor-analysis of covariance design. Administered 168 examination items either 3 or 6 unit examinations.

Results: "Analysis of performance on 2 post-test measures indicate that subjects achieved more from frequent graded unit tests followed by feedbacks." - Journal Abstract.

"The Quiz, Knowledge of Results, and Individual Differences in Achievement Orientation." (Washington University Department of Psychological Technical Report, 1969, No.17, 38 p.).

Evaluated the effect of quizzing on achievement with or without feedback. 294 sailors and marines were given quizzes immediately or 1 day after the lesson under 3 feedback conditions.
(a) Correct answers given immediately;
(b) Correct answers given 1 day after the quiz, and
(c) Only the number of correct answers given the day after the quiz.
"It was found that subjects receiving the delayed quiz did better on the final examination than those receiving the immediate quiz.

Results suggest that a short daily quiz administered one day after a lecture serves to evaluate for the student mathemagenic behaviours in which he engages during the delay. When knowledge of results is delayed, mathemagenic behaviours are also engaged in, but it is the quiz material that is being processed rather than the lecture material. It was further found that the utilization of mathemagenic behaviours varied according to subject's achievement orientation (28 ref.) - Journal Summary.

   Abstract No.9643

156 undergraduates of two sections - one was given a different set of examination questions each week for 4 weeks. The other section answered all 4 sets in the 4th week. Subjects received minimal feedback on examination results.

Results: "Compared to the monthly examination group, the weekly examination group showed significantly higher mean scores on 3 of the 4 sets of examination questions, a significantly smaller increase in test anxiety over the 4 week period, and a significantly higher score on a delayed retention test covering 1st set of material."

It is concluded that examination frequency has effects that are not due to feedback - Journal Abstract.
Major Professor: Dr. Guy Ranzaglia.
Twenty students read course assignment in a special study room. An observer recorded time in seconds spent studying per inch of text material. Rate of studying was the dependent variable.

Results: "Subjects were observed to study at higher rates when quizzed daily than when a programme of Pop. quizzes was employed." (Order No.72-5363, 58 pages).

Abstract No.5795.
Mawhinney, V.T., et.al (Indiana U. South Bend).

12 female and 8 male graduate and under-graduate students were studied using a within - S (AB AB) design.

Academic materials available in a study room. Observer recorded time behind a 1-way mirror.

Daily testing produced consistent duration of study behavior with regular attendance at the study room; weekly and 3 week testing produced sporadic bursts of study behavior and frequent instances of non-attendance. The amount of study behavior occurring in weekly and 3 week testing conditions
increased as the test time drew near (Scalloping).

Results: "Results suggest that daily testing supports more consistent study pattern than do the 2 larger inter test intervals investigated." (Journal Abstract).

Abstract No.4053 - Stauffer, A.J. (U. Georgia).

24 students enrolled in a graduate course in test and measurement were administered a 20-item test 4 times on alternate class meetings following a mid-term examination which indicated relatively low scores - R.W. Covert.

Abstract No.8404 - Palmer, Edward L.(Davidson Coll).

2 groups of college students who were tested on psychology text book material 6 or 3 times during a 10-week course performed better on a final test of psychological knowledge than subjects who utilized the same text book without periodical tests.

"Results suggest that regular assessment may be more important than the frequency of the regular assessment."


442 Calculus students divided into 4 groups on patterns of test frequency given below :-

(a) 5-10 minute daily quizzes,
(b) a 20-30 minute quiz every ¼ or 1/5 meeting.
(c) three 30-50 minute quizzes.
(d) a mid-term examination.

Delay of test results was of 2 patterns - one after one day and the other after 3 days.

"Classes that used quiz-schedule (a) had a significantly higher score at the end of the term than did the (d) classes. The (a) classes performed better than did the (b) and (c) classes. The classes with long delay in the return of papers had a significantly higher achievement than those with a short delay (17 ref.)- A.J. Teakeurst.

Abstract No.2025 - Geiger, O., Glenn and Bostow, Darrel E. (U. South Florida).


49 students from a 10-week under-graduate course were divided into two groups which attended class lectures discussions together. One group was required to take weekly quizzes immediately prior to class sessions.
Differences in performance of the 2 groups on the mid-term and final examinations were statistically significant, with the weekly quiz group scoring an average of approximately one letter grade better on both examinations - Journal Abstract.

(B) STUDIES RELEVANT TO KNOWLEDGE OF RESULTS FEEDBACK:

The second main function of testing directly related to the problem under investigation, is knowledge of results that stimulates the students to work harder and to show better achievement scores. The researcher has extracted some examples of the researches made by the concerned persons in proving the truth of the fact that knowledge of results certainly plays an important role in stimulating the students for learning. The following are some of the many examples in chronological order:

   Deputy, E.C.

   Three sections of 35 students each, were given the Otis Self Administering Test of Mental Ability. One, control group, reviewed the work of the preceding section orally; one had 9-10 minute written test at each session; the other group had a similar 20-minute written test.

   The author finds that the grades were significantly increased when written exercises to measure the students' success were given each time, the class met. provided the attitude on the part of the students toward the work was favourable - S.W. Fernberger (Pennsylvania).
Abstract No.2834.
Panalasigui, I. and Knight, F.B.
"The Effect of Awareness of Success and Failure", 29th
Two groups of fourth-grade pupils, 358 subjects in each,
were given a series of drill units. One group, however, was provided
with the individual and class progress charts. Both groups
had similar initial scores.
Clear advantages resulted from progress record motivation;
the advantage was greatest for the better pupils, but no
significant disadvantage was evident in the case of slower pupils;
the motivation was effective equally for boys and girls; the
method had no effect upon the variability within the group.
P.A. Witty (Kansas).

Abstract No.1571.
Brown, F.J.
"Knowledge of Results as an Incentive in School Room
138 children in Grades 5A and 7A were given drill in
the fundamentals of arithmetic, with knowledge of results of the
previous work.
Comparison of equated groups shows that practice with
knowledge produces more continuous gains than practice without.
Boys are more susceptible to this incentive than are girls.
J.A. McGeoch (Missouri).
   (a) Forlano, George.
   "School Learning with Various Methods of Practice and Reward", Contribution to Education No.688; Teachers, Col. 1936, 114 P.
   (b) Pryer, Douglas.
   "Measurement of Interest in Relation to Human Adjustment." - Holt, 1931, 488 P.
   "The majority of investigations on this point are in agreement that pupils learn more rapidly, the more frequently they are informed of their progress."

   Abstract No.2682.
   Morgan, C.L., and Morgan, L.V.
   A control group and an experimental group of subjects were given similar objective test but each subject of the experimental group was provided a scoring device to determine immediately upon his answering of a question whether or not he had answered it correctly.
   Immediate awareness of success and failure does produce a significant amount of learning as indicated by retests - H.W. Karn (Pittsburgh).

   Abstract No.1618.
   Fay, P.J.

Members of one of two equated groups of students in elementary Psychology were informed that they could secure their Decile Ranks on each four-weeks test in terms of A, B, C, D and E, and members of the second group were not permitted to know their marks.

Knowledge of the test results was shown to be beneficial for 'A' students, detrimental to 'B' students, and slightly beneficial to 'C' students.

Students of low intelligence are said to be in particular need of a knowledge of their marks as an incentive to increased achievement. - A.W. Melton (Missouri).

Abstract No.702.
Flowman, L. and Stroud, J.B.,

Multiple-choice tests were given to two groups of 250 tenth and eleventh grade pupils. Students of one group received their papers back the next day with correct answers marked but the other group did not receive. Six days later the test was repeated, other variables were controlled.

Substantial and significant differences were found in favour of the first group. - M. Murphy (Pennsylvania).
8. 1943. Hand Book of Exp. Psychology by Stevens (132, 133), Page No. 1267-68.

"Hull (1943) analyzed a number of studies on this problem and came to the general conclusion that in typical learning situations the relation between length of delay and effectiveness is described by an exponential or negative growth function."


"The knowledge of results in training programmes should be automatic, immediate and meaningfully related to the task being learned."


(a) Curtis, F.D.


(b) Curtis, F.D., and Woods, G.G.


"A study by Curtis and Wood and more recent study by Curtis reveal that high school students who score their own examination papers and discuss the correct answers make higher scores on subsequent tests than do students whose papers were marked by the teachers."
11. 1946, Educational Psychology by Skinner (125), Page No. 438.

Wolfe, D.

"Military Training and the Useful Parts of Learning Theory", Journal of Consulting Psychology (1946), X.

"Giving the men in training an immediate knowledge of their results was one of the most useful contributions that psychology made to military training. ..... If the learner is right we should let him know; if he is wrong we should tell him wherein he is wrong. In some situations the learner profits most when he is given opportunity to analyze and correct his own errors."

12. 1947, Introduction to Psychology by Munn (67), Page No. 299.

Hobbs, N.


Confirmed "that learners should know the results as soon as possible and have a chance to correct erroneous responses."

13. 1949, Psychological Abstracts (83), Vol. 23, Page No. 491-492

Abstract No. 3913.


Students in experimental group obtained immediate knowledge of quiz results but students in the control group learned their results at the next meeting of the class.
The procedure was followed for the 3 quizzes given during the term and final examination grade was the criterion.

The difference between the equated pairs was in favour of the experimental group and significant at 1% level (M.Murphy).


MacPherson, S.J.; Dees, Valerie; and Grindley, G.C.
(Cambridge U. Eng.)

"The Effect of Knowledge of Results On Learning and Performance : The Influence of the Time Interval Between Trials."

The effect of varying the time interval between trials on the accuracy was studied.

Greater accuracy was obtained with short intervals (1-2 Secs.) when knowledge of results was given. When the results were withheld shorter intervals led to greater deterioration and lower performance than with longer intervals. (M.J. Wayner, Jr.).


Abstract No.1445.


"The A.C.E. Psychological Test was given to 123 volunteers of 160 students. Centile Scores were told individually along with discussion of the test results. 91 indicated the favour of such a practice and 69 indicated disfavour. The opinion is tentatively expressed in favour of giving students their test scores" - T.E. Newland.
Two experimental groups, an informed and an uninformed group were utilized, as well as a number of experimenters (30).

Results of the experiment show "only little reliable evidence for learning without awareness". J.A. Stern.

For many years psychologists believed that knowledge of correct responses aids learning principally because of its value as a reinforcer. Some research, however, strongly suggests that its major contribution may be as a corrective. In one study feedback was given in terms of various combinations of 'right', 'wrong', and no comment. Learning proceeded more rapidly when subjects were told which answers were 'right' or 'wrong' or when they were told which were 'wrong' with no comment for 'right' answers. Both these conditions produced better results than conditions under which they were told 'right' for correct answers, with no comment made for wrong ones (Buss, Brandent, Orgel and Buss, 1956).

"An Experimental Investigation into the Systematic Teaching of Number Combinations in Arithmetic", British Journal of Educational Psychology, 1956, 26, 117-127.

Meddleton interprets his results as follows:­

"Whether the children were conscious of it or not, it would appear that the practice material in the basic number
combinations has been both diagnostic and remedial. Each child had the opportunity to notice his own errors. Any regular occurrence of a mistake throughout the class could have been observed by the teacher, and led to further consolidatory exercises.

Besides this each child was afforded the chance, after corrections, of remedying his own particular number weakness."

   Abstract No.3906.
   Bilodeau, Edward, A; Bilodeau, Ina MCD.; and Schumsky, Donald, A.

"Some Effects of Introducing and Withdrawing Knowledge of Results Early and Late in Practice". J. Exp.Psy., 1959 (Aug.), 58, 142-144.

The task was lever-displacing; knowledge of results was the amount and direction of the error showed.

(a) No improvement without knowledge of results.
(b) Progressive improvement with knowledge of results, and
(c) Response deterioration after the withdrawal of knowledge of results - J. Arbit.

20. 1962, Psychology, Lindgren and Byrne(41), Page No.150.

"If feedback has a reinforcing effect, delay in feedback should interfere with learning (Hockman and Lipsitt, 1961) but actually helps them to remember what they had learned. (Brackbill, Bravas and Starr, 1962).

   Abstract No.4333.
   Landsman, Howard, J., and Turkewitz, Marvin. (City College, New York).

A series of stimulus pairs was presented to 20 undergraduates who were required to choose the correct one of each pair. Half of the subjects given knowledge of results immediately after each response learned faster than the other half with a 6-second delay. - E.J. House.

Abstract No.4945.
"Influence of Knowledge of Results on Performance in a Monitoring Task". (Perceptual Motor Skill, 1963, 16(3), 629-634.
Vigilance performance was tested in 6 independent groups.

Subjects receiving verbal knowledge of results from the E showed less decrement and a significantly higher overall performance. O-presented knowledge facilitated performance regardless of the physical presence or absence of the O in the test cubicle.
W.H. Quartm.

Abstract No.7427.
Mose, James N.; and Grossnickle, William F. (George Washington U.).
"Associating Learning and Differential Information in Knowledge of Results". (Psychol. Reports, 1963, 13(2), 381-382.

The hypothesis is tested that the greater subject's uncertainty concerning his response in paired - associate learning the greater is the amount of 'information' (in the information theory sense) contained in knowledge of results and hence the greater amount of learning. An exploratory experiment confirmed
the hypothesis at the .05 level - Author Summary.

Abstract No.6997.
Bierbaum, William, B. (St. Petersburg Jr. Coll.).
"Immediate Knowledge of Performance On Multiple Choice

A paired replicates design was used on 23 students. On
the first half of the parallel forms test part of the subjects
received immediate knowledge of performance on the 4-choice
Multiple Choice Questions by means of a Pressey type Punch-board,
and others did not. The reverse was the case for the second half
of the 62-item test. Wilcoxon's Test for paired replicates
yielded a T of 19.5 for an N of 17, the scores on the immediate
knowledge of results condition being significantly lower than
those on the no knowledge of results condition at the .01 level
of confidence. Individual differences in reaction to the imme-
diate knowledge of results were noted - Journal Abstract.

By Clark, Kenneth, E. (11).
"A review of studies of the effects of knowledge of
results on performance by Ammons (1954) suggests that knowledge
of results (K R), universally, tends to improve the performance
of subjects in laboratory situations".

By Clark, Kenneth, E. (11).
"Gibbs and Brown (1955), for the first time, tried to
isolate and measure the motivational aspects of knowledge of
results by designing an experiment so that knowledge of results
(K R) was more casual and accidental than is usually the case under these conditions, they argued, the increase in output, if any, can be attributed to purely motivational impact of K R. In their study, they found significant improvements in performance of the subject as a function of knowledge of results."

Locke, Edwin, A.; and Bryan Judith, F.,
"Knowledge of Score And Goal Level As Determinants of Work Rate."

The positive effects of knowledge of results (K R) on learning and performance are firmly established in the research literature (e.g.) (Ammons, 1956; Annett, 1961; Bilodeau and Bilodeau, 1961; Vroom, 1964). However, the question of how knowledge of results facilitates performance has not yet been answered.

Abstract No.9336.
Berglund, Gosta,
"The Effect of Knowledge of Results On Retention".
(Psychology in the School, 1969, 6(4), 420-421).

195 grade 5 Swedish Children were placed in 4 groups following a counter balanced design to test the hypothesis that learning increased if pupils were permitted to examine their corrected tests.

Results indicate that learning is enhanced if pupils examine their tests. - H. Kackowski.

Abstract No.3455.

Wright, John, H.; and Gescheider, George, A. (Hamilton Coll.)


102 under-graduates learned by an anticipation procedure a single 8-pair paired-associates (PA) list of either high or low similarity among PA stimuli under 1 to 3 conditions of delay of knowledge of results (KR) produced by separating systematically within each trial.

The finding of considerably better PA performance under immediate than under delayed KR indicates that the learning of verbal PAs by an anticipation procedure is adversely affected by delay of KR.

This finding supported the hypothesis that one of the functions of immediate knowledge of results in verbal PA learning is to reduce or minimize the detrimental effects of intralist interference. – Journal Summary.


Abstract No.8121.

Cummings, L.L.; Schwale, Donald, P.; and Rosen, Marc., (U. Wisconsin Graduate School of Business).


Found that previous performance on a simple addition task exerted a significant positive impact on the goal levels set by 22 male and 58 female graduates. When performance effects were
accounted for; knowledge of results also influenced goals significantly. When the effect of 4 forms of knowledge of results (KR) were compared, correct knowledge of results increased goal level significantly, and erroneous low KR decreased performance below the level associated with no K.R. (17 Ref.) - Journal Abstract.

Abstract No.3681.
Beeson, Richard, O., (St. Louis U.).

Selected 30 under-graduates in a mathematics class for elementary school teachers, 15 under-graduates in remedial mathematics and 30 Junior High School students in general mathematics courses. Subjects received immediate knowledge of results on either of the 1st or 2nd half of the items on multiple choice tests and delayed knowledge of results on the remaining items.

Subjects in the immediate knowledge of results condition, however, scored significantly (P < .05) higher on the final examination - Journal Abstract.

Abstract No.12119.
Wexley, Kenneth, N.; and Thornton, Carl, L. (U. Akron).

Two classes of college students (N = 169 and 92). Subjects were given feedback on half of the test questions, after each quiz. Their final examination contained an equal number of feedback and non-feedback items repeated from the previous quizzes.
Subjects did significantly better on those items on which they had originally received feedback, even in the case where the feedback had been given 9 weeks prior to the final examination. (17 ref.) – Journal Abstract.

Abstract No.1420.
Hanna, Gerald S. (Kansas State U.).

Approximately, 1400, 5th and 6th graders were given pre-test to match triads. Next they all took a multiple choice test, 1/3 under each of 3 experimental feedback conditions – total immediate feedback, partial immediate feedback, and no feedback. Finally, subjects took a completion format post test.

Subjects taking the multiple choice test without feedback had significantly lower post-test performance than either feedback group. – Journal Abstract.

Abstract No.9068.
Henderson, William, T.; and Wen, Shih-Sung.; (Jackson State U.).

Experimental group N = 48 and control group N = 34 were given correct responses to oral short answer questions in the first 15 minute of each class meeting but only subjects of experimental were also rewarded immediately by extra credits of final grades.
Results indicate that subjects in the experimental group did significantly better on tests 3 and 4 on course examinations than did controls, although groups did not score statistically different on tests 1 and 2 respectively, which were administered prior to the treatment. - Journal Abstract.

(3) CONCLUSIONS BASED ON THE ABOVE STUDIES

The researcher has tried his level best to collect the relevant literature in connection with both the main objectives laid down by him for the study in hand. The different researches made by their investigators have been compiled by the researcher in this Chapter. These researches and investigations clearly favour the two important functions of testing frequently regarding promotion of learning of the examinees. These functions are -

1. Frequent testing motivates the students to prepare for tests in advance.

2. Knowledge of results also serves as an aid to learning.

The researches, given in this Chapter, relevant to frequent testing clearly establish the fact that frequent testing motivates the students and brings about better and improved results and promotes learning.

Secondly, the researches compiled up under this head - "Knowledge of Results" - also shed light that the sooner the knowledge of results is given, the better the results shown by the examinees. These researches firmly support the fact that information given to the pupils about their performance in the test just after the test is over, does motivate the students for further learning and better performance.
On the basis of the different researches of different authors described in the previous pages and also the discussion laid by the researcher, it is concluded -

1. That the effect of frequent testing on the learning outcomes of the students can never be ignored. Frequent testing certainly produces better result than that achieved by infrequent testing.

2. That the students are greatly motivated for better performance in the future test if they are informed, as early as possible, about their erroneous performances in the previous test. In other words - the knowledge of results plays an important role in instigating the students for learning in corrective manner.

Hence, frequent testing and knowledge of results prove effective and bring about better and progressive learning outcomes.