

A Study on Bi-lateral Transfer of Learning through Mirror Drawing

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Abstract

The research paper entitled “A Study On Bi-Lateral Transfer Of Learning Through Mirror Drawing” is stated to research on transfer of learning through mirror drawing so as to Bi-lateral taking 100 samples on purposive sampling technique where condition leads to strong support to the hypothesis that there is a positive effect of right hand’s mirror tracing on the left hand’s performance with the means of mirror drawing apparatus.

Keywords: *Transfer, Transfer of Learning, Bi-lateral Transfer of Learning, Mirror Drawing.*

1. Introduction :-

Bi-lateral transfer is started by Walkman in 1858 , Swift found in 1909 by the study of ball tossing that we when throw up a ball in right hand then it transfer into left hand , Mann in 1933 had repeated the experiment in much controlled condition, but found in 1910 the same result. Stuart has found in 1910 by the use of Mirror Drawing Apparatus that positive transfer from one hand in other hand. Stuart has found in 1926 by the help of control group method that good result of bilateral transfer.

When we learn an activity with right hand, it becomes easier on that account to learn that activity with left hand. The right hand reduces the number of trials necessary for left hand to acquire that skill, such a transfer of learning is called Bi-lateral transfer.

The Experiment of throwing a ball of at moving target and mirror drawing has been studied from particular angle. This experiment shows that here is positive transfer as much as 50%.

According to Gagne (1970)“Bilateral transfer accurse when prior learning and lateral learning are of same difficult level.” The students learn a relationship of one subject area and applies same in another subject area, both involving same difficult level. The present experiment is done in 3 conditions the first condition is prior test condition the subject draws the star pattern viewing its image in the mirror using this condition in the clock wise direction. In the second condition the subject will learn to trace the star pattern with his right hand in anti clock wise direction. Finally in third condition the subject traces the star paper pattern 3 times with the left hand in the clockwise direction.

These results present the conditions leads to strong support to the hypothesis that there is a positive effect of right hand’s mirror tracing on the left hand’s performance.

The time taken and the numbers of errors deceases in the least few trials. The subject learns a new type of eye hand co ordination in later trials. The number of errors and time taken reduces trial wise due to trial and error method of learning given by Thorndike.

2. Operational Meanings:-

2.1 Transfer:- To carry from one place to another or shifting from one place to another is transfer.

2.2 Transfer of Learning :-

According to Dictionary of Education,“ The improvement facilitation or modification of a certain learning without direct training through learning or practice in a related activity, reciprocal modification in learning”.

According to Encyclopedia of educational research, “The term learning will be applied to special kind of transfer phenomena in which there is great similarity between training condition and test condition”.

According to Culhrie and Powers:- Transfer may be defined as power of extending and applying behavior. The transfer is application of knowledge gained it’s the carry over skills, habit, attitudes and other responses.

2.2.1 Types of Transfer:-

1. Positive transfer
2. Negative transfer
3. Unilateral transfer
4. Bilateral transfer

5. Vertical transfer
6. Horizontal transfer

2.2.2 Factors affecting Transfer:-

There are multitude factor affecting transfer. They are:-

1. Amount of training
2. Kind of training
3. Motivation
4. Set
5. Intelligence
6. Techniques of learning
7. Context of education
8. Attention of application.

3. Methodology:-

Objectives:- Researchers aim to find out the transfer of learning through mirror drawing experiment.

Hypothesis:- If a skill is learned in one hand it will have effect on other hand.

Population:- Researchers cover all the B.Ed. students of all the B.Ed. colleges of Raipur district constituted the population of the present research work.

Sample:- 100 B.Ed. students particularly one B.Ed. college is selected as sample through purposive sampling technique.

Methods:- Simple normative method along-with Psychology Laboratory experimentation is followed by the researchers for smooth conduction of this research work.

Tools and techniques:- The required materials:- Mirror Drawing Apparatus, Star Pattern Paper, Stop watch, Drawing Pins and Pencil.

4. Procedure:-

4.1 Variables:-

4.1.1. Independent Variable:- Star seen in the mirror of the apparatus.

4.1.2. Dependent Variable:- Time and error of each trial.

4.2 Control:-

- a. The appropriate atmosphere was made for experimentation.
- b. Star pattern paper was adjusted appropriately on the specified space of the apparatus.
- c. The subject was instructed not to remove or hold her hand while doing the lines.
- d. After each trial one minute rest was given.
- e. Trials were clockwise.

4.3 Instructions:-

- a. You are supposed to get prepared on hearing ready signal.
- b. When start is said you are suppose to start the work.
- c. Do not remove or help of your hand while drawing lines instead move the pencil only.
- d. If your pencil line goes out of stars on which you draw line on the star that will be counted an error, so be careful of that in your attempts.

4.5 Steps:-

- a. Good report was formed with subject and instructions were made clear.
- b. After giving start signals stop watch was click on and at the end of the subject task it was clicked off to note the line. All the 16 trials were taken and time and error were noted in result table.
- c. First three trials (1st, 2nd and 3rd) should be done by un-preferred hand (left hand). Another 12 trials were done by preferred hand (right hand) the last 2 trials were done by again the un-preferred hand.
- d. At the end of the 16th trial an introspection report was taken from subject in which subject write about her experience during drawing line in all star pattern (interest, feature, fatigue regarding mental and physical condition).

Calculations

1. Mean of time of first 2 trials = $T1 + T2 / 2 = 230+200 / 2 = 430/2 = 215$ sec.
2. Mean of time of last 2 trials = $T15 + T16 / 2 = 40+30 / 2 = 70/2 = 35$ sec.
3. Mean of error of first 2 trials = $E1 + E2 / 2 = 10+8/2 = 18/2 = 9$
4. Mean of error of last 2 trials = $E15 + E16 / 2 = 1+0/2 = 1/2 = 0.5$

Transfer of Learning = $C-E/C*100$

C = Mean of error of first 2 trials

E = Mean of error of last 2 trials

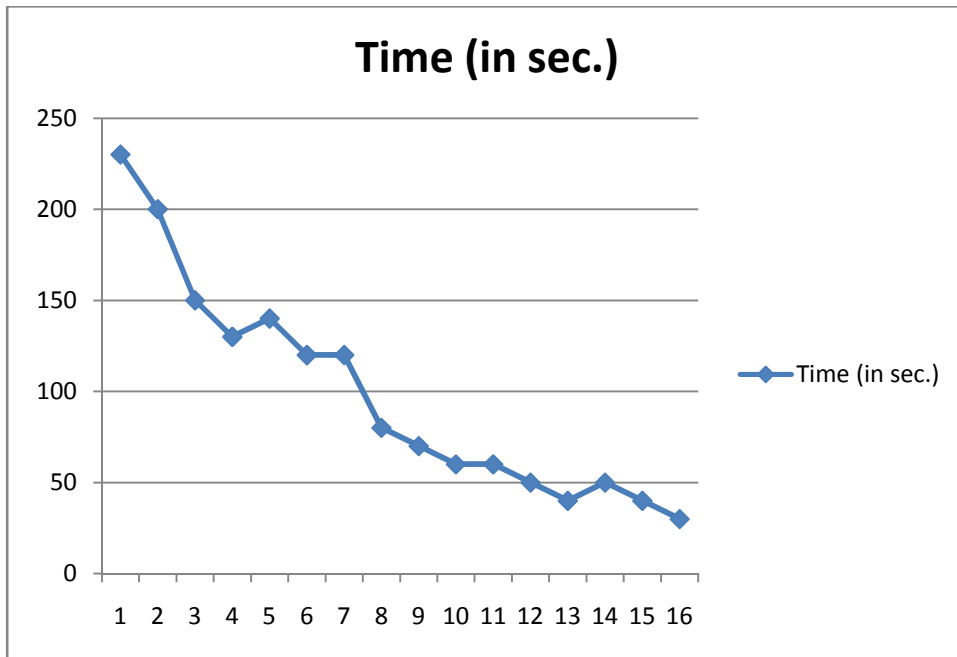
Transfer of Learning = $9-0.5/9*100 = 94\%$

Fig-1

OBSERVATION TABLE

Trial No	Hand Used	Time (in sec.)	Error
1	Left	230	10
2	Left	200	8
3	Right	150	9
4	Right	130	9
5	Right	140	7
6	Right	120	6
7	Right	120	5
8	Right	80	6
9	Right	70	5
10	Right	60	4
11	Right	60	3
12	Right	50	2
13	Right	40	2
14	Right	50	1
15	Left	40	1
16	Left	30	0

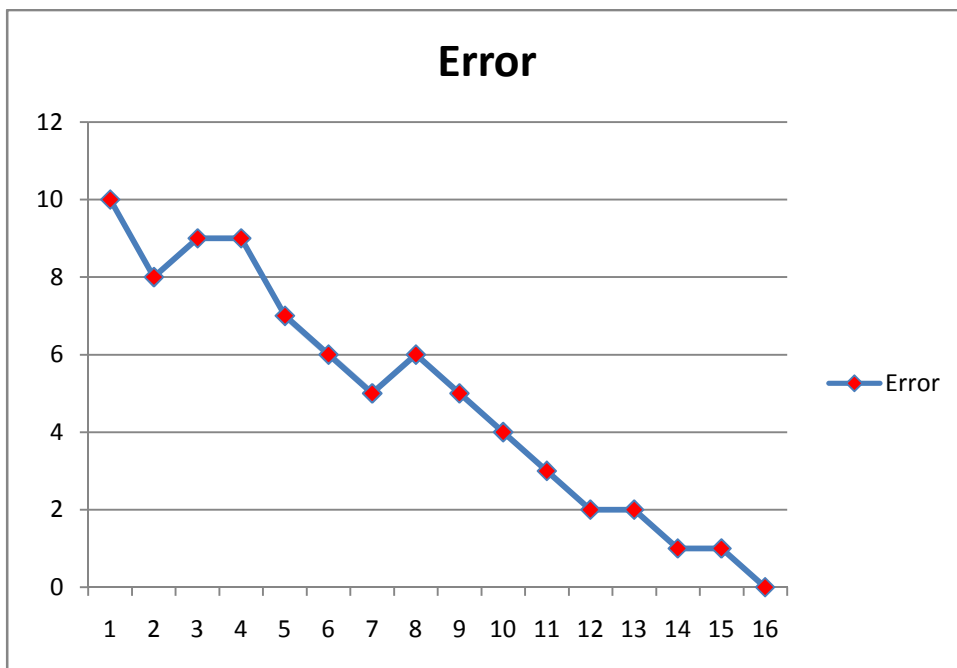
Fig-2



X-axis = No. of Trials

Y-axis = Time (in sec.)

Fig-3



X-axis = No. of Trials

Y-axis = Error

5. Analysis and Introspection of Result:-

5.1 Result:- This research work on subject learning transfer from right hand after practicing with right hand the error goes on decreasing and time taken also got reduce towards the minimum errors then the beginning percentage of transfer of learning each 94 %.

5.2 Introspection:- The subject found difficult to start the 1st trial by the un-preferred hand (left hand) but subject did feel easier to do with right hand. After all the trials of right hand subject did feel easy in each trial by the left hand with reduction of errors within limited time.

5.3 Educational Implication :-

The activity can be closer according to the transfer. The teaching subject can also be chosen for teaching learning which have positive transfer.

Those activities and experiences should be chosen which has got the transfer effect in life situation. ie:- Mathematic subject has a transfer effect in every field of life situation for correct work and result.

References :-

1. Anastasi, A., (1988). Psychological Testing, 6th Edition, *Macmillan, New York*.
2. Best, John & Prentice, W.,(1978).Research in Education, *New Delhi: Hall of India*
3. Buch, M.B., (1983). Fourth Survey of Educational Research, *New Delhi. N.C.E.R.T.*
4. Buch, M.B., (1987). Third Survey of Educational Research, *New Delhi N.C.E.R.T.*
5. Garrett H E: Statistics in Psychology and Education, Indian Edition, Bombay
Vakils,Feffer & Simons Ltd. 1981.
6. Govil M: Changing Social Attitudes and Behavior Patterns among Post GraduateStudents
in U.P. Un Published Ph.D. Thesis, Agra University 1967
7. Guilford J P& Frucher B: Fundamental Statistics in Psychology and
Education.International Students Edition, New Delhi, Inc.1978.
8. Holland J. L: “The Prediction of College Grades from Personality & AptitudeVariables”,
J Education Psychology, 1960, 51.
9. Mark M. H. and HillxW.A.: Systems and Theories in Psychology, New Delhi, TataMe

Graw Hill Publishing Co, 1973.

10. Mangal, S.K., (1993). *Advanced Educational Psychology, Prentice Hall, New Delhi, India.*
11. Mathur, S.S., (2008). *Development of Learner and Teaching Learning Process, Agrawal Publication, Agra.*
12. Mouly G.J: *Psychology for Effective Teaching, H.O.H. Rinehart and Winston Inc. New York, 1973, 85-86.*
13. Panda, B.N., (2007). *Advanced Educational Psychology, Discovery Publishing House, New Delhi.*
14. Rawat D.S: *Measurement Evaluation and Stastics in education, New Delhi, New RajBook Depot, 1970.*
15. Simpson P.S: “The Relationship between attitudes towards reading and attitude towards self as related 1978,38(10).
16. Stanley J. C & Porter A.C: “Correlation of Scholastic Aptitude test scores with College Grades for Nigroes vs Whites”, *Journal of Education, 1967, 4,199-218.*
17. Sukhia S.P Mehrotra P V & Mehrotra R.N.: *Elements of Educational Research, Third Revised Edition, New Delhi, Allied Publisher Private Ltd. 1974.*
18. Trafton B. F. “Relationship Between Self-concept, Learning Attitudes, Teacher Rating and Academic Achievement in Grades one to Eight”, *Diss. Abst. Inter, 1978,38(10).*