

IQ+PROGRAMMEr ABSTRACT

J. BHARATHRAJ*, VIDYASAGAR† AND A. D. BHAVANI‡

The IQ Programme was a small scope research project carried out to put to test the possibility of improving the functioning levels of intelligence among children by using a set of novel training procedures tried for a duration of two months. The experimental group consisted of 8 children varying in age from 5J to 8 years studying in I, II or III Standards drawn from a village school. The training procedures were carried out as stipulated in the programme, given by Getman. Four different tests were tried, viz., Seguin Form Board (SFB), Vineland Social Maturity Scale (VSMS), Columbia Mental Maturity Scale (CMMS) and Kamath's Revision of Binet. A composite Mental Age (MA) inclusive of scores on all the tests with the IQ was worked out both prior to and after the training procedures. The results pointed out a statistically significant improvement by 21 IQ points. The control group did not show any such difference. The findings of the study proved that it is possible to lift up the levels of intellectual functions among children through the use of this procedure.

Introduction

An area of great practical value in Psychology is to enquire into the possibility of improving the functioning levels of intelligence by using certain unique and novel training procedures. The early notions on the constancy of IQ had prevented people from carrying out such studies. Subsequently studies from developmental psychology showed that given certain special circumstances, it is possible to improve the IQ's of children. Thus the early belief of constancy of IQ became an exception rather than a rule. Regulating the behaviour of the children through certain training procedure an all round development can be brought about in the different areas of development like motor language, emotional, adaptive, personal, social, etc.

The outstanding contribution during the past two or three decades have made us realise that significant improvement in intelligence does occur through special innovative training approaches. The implication of such training pro-

* Dr J. Bharathraj, Professor and Head. Department of Clinical Psychology, All India Institute of Speech and Hearing, Mysore.

† Mr Vidyasagar is presently studying for M.Phil, in Clinical Psychology at the National Institute of Mental Health and Neurosciences, Bangalore.

‡ Miss A. D. Bhavani, Lecturer in Clinical Psychology, All India Institute of Speech and Hearing, Mysore.

cedures would extend to other clinical groups like retarded children, under-achievers at school, children with motor disabilities, the language deficiencies, the culturally deprived, etc.

The present research study is one such where the training procedures as given by Getman have been tried with a group of normal children drawn from a socially backward area. It is very fitting that this study has been carried out in the International Year of the Child (1979) when peoples' interest have been focused on the child.

Plan and Execution of the Research Study

Scanning the literature pertaining to the training programme of children in intellectual adequacy, German's procedures illustrated in his book, 'How to develop your child's intelligence' was chosen as they had shown distinctly encouraging results. Further, studies have pointed out that children who have undergone the procedure have shown improvement in their educational achievements also. As Getman himself says, 'they have been tried out on school children and have proved to be highly effective in (a) developing readiness in pre-school child, (b) helping the primary school child to apply what he had learnt at school to his own every day activities and (c) assisting the slow learning child to more adequate school and social achievement'.

The experimental group

This group consisted of 8 children, seven of whom were from Thonachikopal village school, 2 kms from the All India Institute of Speech and Hearing, Mysore. One child was from Mysore city. As the procedures are highly individualistic, we were more interested in individual results than group results. The age range of children was from 5 1/2 to 8 years. Four of them were boys and four of them were girls. These children were studying in I, II and III standard. Except one child, seven children came from rural families belonging to poor socio-economic status.

Control group

This group also consisted of eight, children drawn from the same village whose age range was from 5 1/2 to 8 years and who were studying in I, II and III standards in the same village school. Five of them were boys and five of them were girls. These children for purpose of measurement of intelligence could only be screened at the terminal points of the training programme on the Seguin Form Board Test.

Aim of the investigation

The objective of the present study was to see whether the trial of Getman's procedures do bring about a significant improvement in the intellectual function-

ing of the children. Hypotheses were framed to test the contentions of the training procedure which we have used.

Hypothesis 1: That there is no significant difference between the pre- and post-training levels of intellectual functioning in the experimental group.

Hypothesis 2: That there is no significant difference between the pre- and post-training levels in intellectual functioning in the control group.

Hypothesis 3: That there is no significant difference between the pre- and post-training levels of intellectual functioning in the experimental group on either of the four tests, (1) Seguin Form Board (SFB), (2) Columbia Mental Maturity Scale (CMMS), (3) Vineland Social Maturity Scale (VSMS) and (4) Kamath's Revision of Binet (KB).

In order that there should be a significant difference in the experimental group between pre- and post-training levels, this difference must be over and beyond that which might result from familiarity. SFB was the only test the control group has been tried, therefore, considering the SFB performance only for both the groups an attempt has been made to find out whether the improvement that takes place in the experimental group after training, is over and beyond that which can be attributed to the effect of familiarity.

Hypothesis 4: That there is no significant difference in the gain among the experimental and control groups on the SFB performance.

For the purpose of evaluation of the experimental group all the four test performances have been put together and a composite Mental Age (MA) derived. As these tests tap different modalities of intelligence the composite score would be more reliable.

Procedure

As mentioned earlier the procedures spelled out by German in Chapter IV of his book were carried out on the experimental group children. Therapy (training) was tried between 8.30 a.m. to 12.30 p.m. on each day, six days per week from 6-4-79 to 3-6-79 for a period of 2 months at the All India Institute of Speech and Hearing. Children were screened for speech and hearing defects and none of them were found to have any. Getman brings the sequences of all areas of development under six sequential and inter-related areas of development. A child should be given the opportunity to extend his ability in each one of these areas. The sequence of these procedures has been presented in the following order because they chronologically develop in this order.

(A) *General Movement Patterns:* This is a primary process laying foundation for all performance and all learning. Through this process the child learns to use his various body parts like head, ears, eyes, legs, etc., to move about.

(B) *Special Movement Patterns*: This is a derivative and an extension of the above (A) process. The child learns to use his body parts in co-ordination to control and manipulate the things in the external world. These help in acquiring gross and fine motor skills.

(C) *Eye Movement Patterns*: These exercises help the child in learning the eye movement skills that are necessary for quick and efficient visual inspection. Economy in the use of visual skills is attained.

(D) *Communication Pattern*: These procedures help the child in learning to use his visual and movement experience for communication with others. Exchange of information through speech is attained, a large part of speech communication being developed via imitation.

(E) *Visualization Pattern*: These procedures help the child to learn the visual interpretation of similarity and differences in objects, numbers and words. He learns to discriminate through these procedures.

(F) *Visual Perceptual Organisation*: This is the last process in the development of a total child. This is the end result of the sequential and inter-vowen relationship among the procedures discussed earlier. Through this, symbolization, visual as well as auditory becomes easy.

The various procedures as described by German were tried step by step in the same sequential order as given by him.

Discussion

The summary of obtained results on the study are presented in the previous section of tables and graphs.

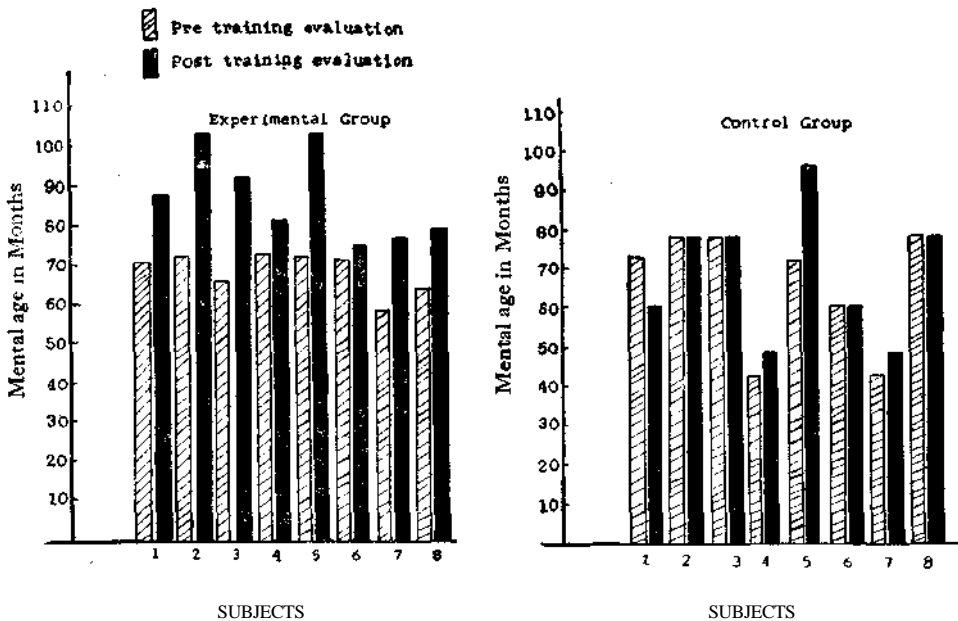
Table-1 presents the result of the experimental group. The pre- and post-training Mental Age scores in months can be compared. It may be remembered that these are composite mental age scores inclusive of all the four test performances. It may be observed that every child has improved in performance after training. The maximum improvement is by about 31.25 months, equal to 2 1/2 years mental ability. The minimum increase is by about 3 1/2 months. There are 6 children with at least an improvement of one year's mental ability which is very considerable in a short period of two months training. Graph-1 compares the E and C groups' mental ages prior to and after training.

The right-hand side table presents pre- and post-training IQ scores with the differences column. Here again, all the children have shown improvement with maximum improvement of 32 IQ points and a minimum of 3 IQ points.

Taking the group as a whole the average improvement in Mental Age is by 18.86 months; that is by nearly 1 1/2 years and similarly the average IQ increase is by 20.88 or 21 IQ's. These two values viz., 18.86 months and 20.88 IQ points

TABLE-1. Experimental group: A comparison of pre and post-training evaluation

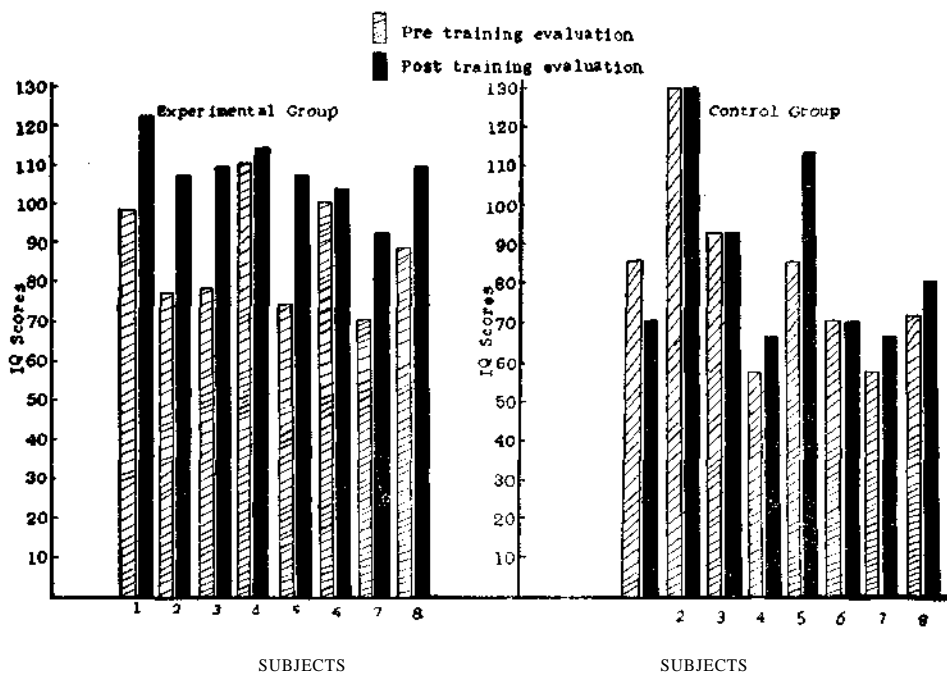
Sl. No	Case names	Pre-trg. average MA in months	Post-trg. average MA in months	Difference in MA in months	Pre-trg. average IQ scores	Post-trg. average IQ scores	Difference in IQ's
1.	Papanna	71.00	88.50	17.50 +	99	123	24 +
2.	Ningappa	72.00	103.25	31.25 +	78	108	30+
3.	Mahadeva	66.00	92.00	26.00+	79	110	31 +
4.	Harshavardhana	73.50	81.75	8.25 +	111	115	4+
5.	Shanam	72.00	103.00	31.00 +	75	107	32+
6.	Rukmini	72.50	75.00	3.50 +	101	104	3 +
7.	Radha	59.25	77.75	18.50+	71	93	22 +
8.	Naseema	64.25	79.25	15.00+	89	110	21 +
Total		550.50	700.50	151.00	703	870	167
Average		68.81	87.56	18.86	87.87	108.75	20.88



GRAPH 1: Comparing the mental ages of the experimental and control groups prior to and after training

TABLE-2. Control group: A comparison of pre and post-training evaluation

Sl No,	Case names	Pre-trg. average MA in months	Post-trg. average MA in months	Difference in MA in months	Pre-trg. IQ scores	Post-trg. IQ scores	Difference in IQ scores
1.	Beerappa	72	60	-12	86	71	-15
2.	Kumara, B.	78	78	0	130	130	0
3.	Shivakurnara	78	78	0	93	93	0
4.	Nagaraja	42	48	+6	58	67	+9
5.	Rachaiyah	72	96	+24	86	114	+28
6.	Laxmi	60	60	0	71	71	0
7.	Kempamma	42	48	+6	58	67	+9
8.	Nagarathna	78	78	0	72	81	+9
Total		522	546	24	654	694	40
Average		65.25	68.25	3	81.75	86.75	5.00



GRAPH 2. Comparing the experimental and control groups' IQs prior to and after training

have been tested for statistical significance and were found to be significant both at .05 and .01 probability levels.

Table 2 presents results of the control group. In comparison with the experimental group many children show no significant improvement. One child gets a decrease in 12 months and one child shows an increase by 24 months. It is difficult to explain this. This control group as mentioned earlier Was tried only with the SFB Test unlike the experimental group and thus the results are difficult to interpret. Graph 2 compares the I.Q's of E and C groups prior to and after therapy.

The right-hand side of the Table-2 presents pre and post-training IQ scores with the differences column. Three children did not show any improvement, one child showed a decrease by 15 IQ points, one child showed an improvement of 28 IQ points and three children showed an improvement of 9 IQ points.

Taking the performance of group as a whole, the average increase in Mental Age for the group is by 3 months and an increase of 5 IQ points both of which were not found to be statistically significant both at .05 and .01 levels.

In general, certain findings from the study stand out. This training programme has brought about significant improvement in mental abilities. Another finding is that children vary in terms of responsiveness to training programme, with the majority showing better- results.

Conclusions

1. The training procedure did bring about a statistically significant improvement in the levels of intellectual functioning among the children in the experimental group.
2. The control group did not show any significant improvement.
3. The experimental group did show a statistically significant gain in every one of the tests used.

Recommendations

This research study was carried out on a small group of eight children who formed the experimental group. More children could not be included in the study as the procedures were individualistic. However, by having more number of trainers the number of children could be increased.

This study was carried out on children who were drawn from culturally deprived section. All the children were essentially normal. There is every possibility that if the same procedure is tried on other reference groups like normal children, backward children, under-achievers at school, mentally retarded children, etc., similar results would follow.

Acknowledgements

The investigator and co-investigators gratefully acknowledge the financial help provided by the All India Institute of Speech and Hearing, Mysore, in the conduct of this study. Special mention must be made of the staff of the Department of Speech Pathology, along with the Department of Audiology and Otolaryngology, and the students of A.I.S.H, who actively co-operated in the study. More important than all, the genuine interest and enthusiasm displayed by the children under study was exemplary and thus highly praiseworthy.

The idea of choosing a group of children from Thonachikoppal. village was suggested by Dr N. Rathna, Director, All India Institute of Speech and Hearing — and also extended all the necessary facilities in the therapy block, for conducting the study.

BIBLIOGRAPHY

1. B.B. Burgameister, H.H. Blum : (1954), (*Columbia Mental Maturity Scale* (Manual) Harcourt, Brace and World, Inc., New York.
2. Clarke, A.D.B. and Clarke : (1958), Cognitive changes in feeble minded. *British Journal of Psychology*, 1954, 45, 173-179.
3. Edger A. Doll : (1936), *Measurement of Si-nal Competence*, American Guidance Service Inc., 1953.
4. Getman : (1962), *How to improve your child's intelligence*.
5. Kirk : (1958), *Socio-Cultural Aspects of Mental Retardation*. Edited by H. Carl Haywood, Meredith Corporation (1970), New York,
6. Smith: (1942), Language and non-verbal test performance of racial groups in Honolulu before and after fourteen year interval. *Journal of Genetic Psychology*, 1942, 26, 51-78.
7. V- V. Kamath : (1936), *Hindi Hudugara. Buddhimapanavu*, 1963. Purohit and Purohit. 1280, Shukrwarpath, Poona-2.
8. Wheeler, L.R. : (1942), A Comparative study of the intelligence of East annossee mountain children. *Journal of Educational Psychology*, 1942, 33, 321-334.