The Transcendental Meditation technique proved to be a valuable means to reduce neuroticism in secondary school students.—EDITORS

The Eysenck Personality Inventory (EPI), a standard measure of neuroticism and extraversion, was administered to a group of thirty-five sixth-form students. Of this group fourteen self-selected students learned the Transcendental Meditation technique and constituted the experimental group. The remaining twenty-one students constituted a no-treatment control group. The pre-test was administered to both groups prior to the instruction of the experimental group into Transcendental Meditation. After an interval of sixteen weeks both groups were re-tested.

Analysis of data showed a significant decrease of neuroticism between pre-test and post-test for the experimental group (p < .02) with no significant change taking place in the no-treatment control group.

No significant changes were found on the extraversion scale pre- to post-test for either group.
This finding of decreased neuroticism in practitioners of Transcendental Meditation, taken together with the results of an earlier study, provides evidence of the beneficial effects of the Transcendental Meditation programme, and outlines the feasibility of introducing the programme into education.

INTRODUCTION

The current research was designed to investigate the effects of the Transcendental Meditation programme on the emotional adjustment of secondary schoolchildren in Britain. It formed the empirical sequel to a quantitative pilot project conducted by the author in a comprehensive, secondary school in Sussex, England (2). This earlier project had involved the teaching of the Transcendental Meditation technique to a group of ten sixth-form students (six girls, four boys, average age 17 years) as part of a Science of Creative Intelligence (SCI) course incorporated into their General Studies curriculum.

The SCI course consisted of a series of 11 weekly lessons which were based on the Science of Creative Intelligence Secondary School Curriculum devised by an international team of teachers and educators working at Maharishi International University (4). The Science of Creative Intelligence, like any science, is considered to have two aspects, one theoretical, the other practical. It is proposed that the theoretical aspect consists of the nature, origin, range, growth and application of creative intelligence. The practical aspect or 'lab work' is the TM technique through which creative intelligence is considered to be directly experienced. Hence the SCI course aims to serve as an intellectual stimulus and back-up to the experience of the TM technique.

At the end of the General Studies course, the ten students were asked to complete a questionnaire asking for a subjective evaluation of any changes they had noticed since beginning the TM technique. They were asked to respond under three headings: mental development, physical benefits and social improvements. In the first section, six of the ten students reported definite improvements, such as: ability to concentrate better, broadened awareness, slightly more retentive memory, improvement in study. In the second section, four students reported decreases in depression, four also reported less tiredness. Sleeping better, greater energy and ability to relax were also mentioned. In the third section, all but two students had noticed some improvement including: less nervousness and tension, increased self-confidence, less irritability, more ability to cope. Three reported that the changes had been noticed by others. No student reported that he had not experienced any benefits since beginning the practice of TM.

Whilst it was recognized that these encouraging subjective reports did not constitute reliable empirical evidence for the usefulness of the TM programme and SCI in secondary schools, they certainly appear to have been corroborated by experimental studies found in the literature which have reported significant changes in intellectual and emotional development of students with regular practice of the TM technique (5).

Moreover, the results from this preliminary project provided the impetus for a more objective test of the potential efficacy of the TM technique in improving emotional adjustment in students, in a second school study which will now be described.

This second study was designed to test the hypothesis that schoolchildren who practise the TM technique over a 16-week period will show a significant decrease in neuroticism score, as measured by a reliable, standardized questionnaire.

METHOD

SUBJECTS—The subject sample consisted of 35 sixth-form students from a state comprehensive school near Cardiff, South Wales. Of this group, 14 self-selected subjects learned TM and constituted the experimental group (8 females, 6 males); the remaining 21 constituted a no-treatment control group (13 females, 8 males). The mean age of the experimental group was 17.4 years and of the control group 17.7 years.

A pre-test/post-test experimental design was used with an inter-test interval of 16 weeks.

PROCEDURE—The Eysenck Personality Inventory (EPI) was selected as a measure of the dependent variable, neuroticism. The EPI is a well-validated instrument which measures extraversion-introversion, neuroticism-emotional stability, and also contains a lie-scale designed to detect subject disimulation (1).
Equal numbers of the two forms of the EPI (Form A and Form B) were distributed randomly among subjects in the experimental group and among subjects in the control group, at pre-test. The experimental group was instructed in TM approximately one week following the pre-test. Checking sessions and SCI lessons were offered informally to subjects in the experimental group each week during the duration of the 16-week project. At post-test, subjects were retested on the EPI: those who had completed Form A of the EPI at pre-test completed Form B at post-test, and vice versa.

RESULTS

The means and standard deviations on the EPI for both groups are presented in table 1. Analysis of variance with factors Group, Sex and Test was performed on the data. On the neuroticism scale of the EPI there was a significant interaction of Group and Test ($F(1,31) = 5.03$, $p < .032$). A planned comparisons test was performed on the data, and revealed, as expected, a significant decrease in neuroticism score for the experimental group, from pre-test to post-test ($t = 2.73, 13 df, p < .02$, see fig. 1). There was also a main effect of Group, with higher scores for the experimental group than for the control group at both pre-test and post-test ($F(1,31) = 7.35, p < .011$).

On the extraversion scale, there was a main effect of Group, with lower scores for the experimental group than for the control group at both pre-test and post-test ($F(1,31) = 8.43, p < .007$).

No significant effects were found on the EPI Lie Scale.

No significant effects of sex were found.

DISCUSSION

The experimental group which practised TM, as predicted, showed a significant decrease in neuroticism score from pre-test to post-test. This substantiates the findings reported earlier from the quantitative project and adds to the body of empirical evidence which has consistently found decreases in self-reported neuroticism and anxiety to be associated with practice of the TM technique (5).

The experimental group, prior to instruction in the TM technique, demonstrated significantly higher neuroticism scores and significantly lower extraversion scores than the controls. The controls' scores on these two scales were closer to the norms reported by Eysenck (1), which leads to the conclusion that, in this study, students of slightly higher neuroticism level and slightly lower extraversion level than the norm were attracted to the TM pro-

| TABLE 1 | Eysenck Personality Inventory: Means and Standard Deviations |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                                  | EXPERIMENTAL GROUP              | CONTROL GROUP                   |                                 |
|                                  | (N = 14)                        | (N = 21)                        |                                 |
|                                  | Pre-test                        | Post-test                       | Pre-test                        | Post-test                       |
|                                  | Mean   | S.D.   | Mean   | S.D.   | Mean   | S.D.   | Mean   | S.D.   |
| Neuroticism Scale                | 15.71  | 3.5    | 13.64  | 3.6    | 11.10  | 4.7    | 11.19  | 4.0    |
| Extraversion Scale               | 12.21  | 4.4    | 11.64  | 4.3    | 15.43  | 3.1    | 14.62  | 3.7    |
| Lie Scale                        | 2.07   | 1.4    | 2.00   | 1.4    | 2.33   | 1.6    | 1.91   | 1.6    |

FIG. 1. Eysenck Personality Inventory Neuroticism Scale
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gramme. However, such a finding may be atypical; Lazar, Farwell and Farrow (3), for example, report that in their study individuals with wideranging initial anxiety scores come to learn the TM technique, and all apparently experienced a significant decrease in anxiety score.

The two projects reported here outline the feasibility of introducing the TM programme into British state schools and provide some evidence of its beneficial effects. It is to be hoped that future research will extend the range of variables to be investigated and thereby produce a more holistic evaluation of the TM programme and the Science of Creative Intelligence.

REFERENCES