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Educational Attitude, Dogmatism and Machiavellianism of Student Teachers

School life can be a source of quite a variety of problems for a new teacher. Factor-analytical studies (Cruickshank et al., 1974; Ingersoll, 1976) have identified a few clusters of such teacher concern; these clusters centre around the pupils (e.g. invigorating, helping, developing and changing them), discipline (e.g. classroom management, getting pupils to behave in the expected manner), teaching methods (e.g. individualizing instruction, improving pupil achievement), administration (e.g. wanting the understanding and sustenance of administrators, maintaining a professional relationship with other teachers and administrators), among others. Examining the results of earlier studies on the attitudes of students and teachers to their training courses, Taylor (1975) located six categories of concerns associated with beginning teachers: practice of teaching (e.g. having command of a range of practical teaching techniques), theory of teaching (e.g. understanding the theory of effective teaching), school and staff (e.g. coming to know the authority structure of the school), discipline and class control (e.g. getting a class to accept one's authority), pupils (e.g. having a knowledge of how pupils learn and make judgments), and curriculum (e.g. understanding how to plan lessons). In a sense, the whole teacher education programme is an attempt to develop in the student teachers the understanding of and skills in coping with these problems.

Despite the lack of a high correlation between verbal attitudes and overt behaviours, the action component of attitudes has been generally recognized. It is considered as part of an attitude which pre-disposes a person's action toward the object. Thus, it can be reasonably expected that the action a teacher will take to cope with a particular problem in the classroom or school will depend partly on his attitude toward the relevant situation or person. Then, to the extent his perception of the problem and his interpretation of the situation are affected by his attitude, the latter will bear on his effectiveness in coping with the problem at hand. Therefore, it would be worthwhile to study the young teachers' attitudes towards some key areas of school life such as the children, discipline, teaching methods and school administration.

A teacher's attitudes toward these key areas of school life may be located on a particular point of a continuum ranging from very rigid and autocratic to very flexible and democratic. The latter end of the attitudinal continuum is best represented by educational progressivism which advocates a greater interest in and concern for children as developing individuals, with various kinds and degrees of potential.

The work of a teacher involves not infrequently the acquisition of new knowledge in the form of new concepts, principles and theories bearing upon educational practice, new skills and techniques to help effect curricular changes, and new attitudes to serve as a support for whatever the changes may be. As extensive research (Rokeach, 1960) has shown, dogmatism or closed-mindedness as personality disposition affects a person's receptivity to new experiences, with those highly dogmatic or closed-minded having greater resistance to new information which is incompatible with his current value systems and beliefs. That being the case, some relationships can be expected between dogmatism and attitudes towards various aspects of school life. Some studies of teacher dogmatism have appeared during the past one-and-a-half decades. There are studies concerned mainly with describing or comparing teachers of different background and specialization in terms of dogmatism (Soderberg, 1964; Rakin, 1966; Cappelluzzo and Brine, 1969; Soh, 1973). Some other studies deal with the dynamic aspect of dogmatism among teachers (Vacchiano *et al.*, 1966; Johnson, 1969). Still others investigate teachers' attitudinal and behavioural correlates of dogmatism (Johnston, 1967; Cohen, 1971; Soh, 1972 and 1974). Another important facet of the teacher's work is the continuous face-to-face encounters with people, both children and adults. In such situations, how the problems are dealt with depends on how the people involved are perceived by the teacher. Interaction with people can take place in a means-ends context; whether other people are seen as of value in and of themselves or mere instruments for achieving some goals, perhaps oblivious to them. Studies in Machiavellianism (Christie and Geis, 1970) show people who are manipulative in their perception of people as being more skil-

ful and hence more successful in dealing with others. They conceal their own feelings and exploit others to attain their own goals. Unfortunately, no studies on teacher Machiavellianism have been located. Studies in Machiavellianism that were carried out in an educational setting deal with the manipulative skills of young children in contrived situations.

As social interaction plays an important part in the teacher's life in school, his perception of people (as means or ends) may affect his attitudes towards various aspects of school life, especially those involving children, colleagues and administrators. This is therefore of special significance for the reason that effectiveness of teachers has been found to correlate with such characteristics as warmth, empathy and concern, whereas Machiavellianism implies the opposite – coldness, detachment and exploitation. Thus, one would expect Machiavellianism to correlate with the teacher's attitudes towards those people he comes into contact with in the school life, especially the pupils and administrators who may be of instrumental value to him.

The present study is therefore conceived as an exploratory investigation of the student teachers' educational attitude, closed-mindedness and manipulateness as well as the relationships among them.

THE TESTS

Educational Attitude Scale

The Educational Attitude Scale purports to measure the respondents' progressivism in their views on educational matters that are important in the school set-up. High scores on this scale indicate a more democratic, liberal, and learner-oriented attitude. The scale deals with four specific aspects of the school life of a teacher, namely, the children, discipline, teaching methods and school administration. The scale consists of the following four subscales:

Children Subscale

This gauges the respondents' attitude toward children – whether they see children as a source of delight or trouble and their perception of the nature of children's behaviour.

Discipline Subscale

This measures the respondents' attitude to classroom discipline – whether they are in favour of an autocratic, rigid and punitive approach to maintaining discipline.

Methods Subscale

This taps the respondents' attitude toward teaching methods – whether they favour a flexible approach to teaching, emphasize knowledge acquisition and see examination results as a criterion for effective teaching.

Administration Subscale

This measures the respondents' view on the mode of school administration – whether they believe in principal-teacher interaction and consultation in the running of a school.

The Educational Attitude Scale used in the present study is adapted from an earlier version (Lau and Soh, 1971; Soh, 1974). The twenty statements of the scale were presented in the form of a six-point scale with the following weights:

Response Category	Weight
I agree very much	5
I agree on the whole	4
I agree a little	3
I disagree a little	2
I disagree on the whole	1
I disagree very much	0

For the two groups of respondents involved in the present study, the Spearman-Brown reliabilities are .534 and .785. These are higher than the reliability of .36 reported for the earlier version (Soh, 1974).

Dogmatism Scale

This is a test of closed-mindedness. As described by Rokeach (1960), the originator of the Dogmatism Scale, “. . . those who score extremely high on this Scale are shown to differ consistently from those who score extremely low in the ability to form new belief systems, whether these new systems are conceptual, perceptual, or aesthetic in nature!”

Thus, people high on the Dogmatism Scale will tend to see the world as threatening, believe in absolute authority, and resist new inflow of information.

The original Dogmatism Scale resulted from factor analysis of a large number of items. The present study used an adapted version of the scale of twenty high-loading items, which was used in three earlier studies (Soh, 1972, 1973, and 1974). Items with obvious cultural, religious, and political connotations were not included. The twenty selected statements were presented as a six-point scale similar in form to the Educational

Attitude Scale. For the two groups of respondents in the present study, the Spearman-Brown reliabilities are .852 and .822. These are higher than most reliabilities obtained by Rokeach (1960) for various samples and those reported by Soh (1972, 1973, and 1974).

Machiavellianism Scale

Machiavellianism is a trait named after the ancient Italian author, Machiavelli, who argued that one is more likely to achieve one's goal by concealing one's own feelings and opportunistically exploiting others. The Machiavellianism Scale was developed by Christie and Geis (1970) and has been validated through a series of "manipulative games" in which high scorers were found to be more manipulative and hence more successful in winning (Smith, 1972). People high on this scale are said to be dispassionate, manipulative, cynical and morally unconcerned.

The present study adapted ten statements from the Machiavellianism Scale and presented them as a six-point scale in the form similar to the Educational Attitude Scale. For the two groups of respondents in the present study, the Spearman-Brown reliabilities are .493 and .706, which are well within the range of reliability expected of tests of this nature.

NATURE OF THE STUDY

STUDY I

The purpose of this study was to examine the student teachers' educational attitude, closed-mindedness and manipulateness and such

relationships that might exist among these variables. The subjects were two groups of female student teachers, and their responses were analyzed separately. Findings with regard to the first group are first presented followed by those for the second group.

The Respondents

The respondents of Study I were 52 female student teachers in the Certificate in Education Course for trainees whose entrance requirement for teacher training was the GCE O or A Level. They had a mean age of 21 years (SD 11 months). At the time of testing, they were in the second year of a three-year programme. The respondents had about one year of teaching practice in the schools, mostly primary.

Results

Educational Attitude. As shown in Table 1, the respondents scored a mean of 76.19 (76% possible score) for the Educational Attitude Scale, suggesting that they were rather progressive where educational matters in general were concerned.

In terms of the subscales, the mean for the Administration Subscale is 20.67 (83% possible score). This is followed by a mean of 19.81 (79% possible score) for the Children Subscale. Next to this is a mean of 18.96 (75% possible score) for the Methods Subscale and the lowest mean of 16.75 (67% possible score) goes to the Discipline Subscale. Table 2 shows the Z-ratios for differences between means for the four subscales. The results are summarized below; where non-significant differences had been found between pair of means, the subscales were underlined:

Discipline Methods Children Administration

Table 1 Means, Standard Deviations, and Per Cent Scores for Certificate-in-Education Students (N=52)

Scale	Mean	SD	Per cent Score
Educational Attitude	76.19	8.82	76
Children	19.81	2.63	79
Discipline	16.75	4.27	67
Methods	18.96	2.63	75
Administration	20.67	2.93	83
Dogmatism	57.67	10.70	58
Machiavellianism	19.96	7.44	40

It may be concluded that the respondents were progressive, in general, in their views on education, but their views varied with specific areas of concerns. They were most progressive with regard to school administration, least so towards discipline, and moderately progressive regarding children and teaching methods.

Dogmatism. Also, as shown in Table 1, the respondents scored a mean of 57.67 (58% possible score) on the Dogmatism Scale, suggesting that they were slightly closed-minded.

Machiavellianism. Meanwhile, as shown in Table 1, the respondents scored a mean of 19.96% (40% possible score) on the Machiavellianism Scale, suggesting that they were somewhat non-manipulative.

Correlations among Scales. As can be seen from Table 3, there are no significant correlations among Dogmatism, Machiavellianism, and Educational Attitude Scale, indicating that closed-mindedness, manipulateness, and educational attitude in general were independent of one another. There are, however, positive correlations among the subscales of the Educational Attitude

Scale, suggesting certain degrees of relationships between attitudes towards children and discipline, between attitudes toward discipline and teaching methods, and between attitudes toward teaching methods and school administration. In addition, there is a significant correlation between Dogmatism and Administration, suggesting that respondents who were more closed-minded were more progressive in their views regarding school administration. None of the four subscales of the Educational Attitude Scale correlate significantly with the Machiavellianism Scale, which is not related to the Dogmatism Scale either.

Factor Structure. As shown in Table 4, correlations between the four subscales of the Educational Attitude Scale, the Dogmatism Scale and the Machiavellianism Scale were submitted to factor analysis by the centroid method. This yielded a general factor accounting for 24% variance and a bipolar factor accounting for 11% variance. Rotation for simple structure resulted in a first factor accounting for 17% variance with high loadings on Children (.65) and Discipline (.70) and a moderate loading on Methods (.40). Orthogonal to this factor is a second factor accounting for 18% variance with moderate loadings on Methods (.50) and Dogmatism (.55) and a high loading on Administration (.70). It is of note that Machiavellianism does not appear in either of these two factors.

Table 2 Z-ratios for the Differences between Means for the Educational Attitude Subscales for Certificate-in-Education Students (N=52)

Subscale	Children	Discipline	Methods	Administration
Children	—	5.623*	1.798	1.725
Discipline			3.899*	6.126*
Methods				4.305*
Administration				

*p<.01

Table 3 Correlation Coefficients and Reliabilities for Certificate-in-Education Students (N=52)

Scale	EA	C	D	M	A	DM	MACH
Educational Attitude (EA) (.534)	—	—	—	—	—	.083	-.016
Children (C)			.447*	.175	.182	.042	.023
Discipline (D)				.388*	.235	-.118	.013
Methods (M)					.483*	.083	.077
Administration (A)						.362*	.019
Dogmatism (DM)						(.852)	.011
Machiavellianism (Mach)							(.493)

* $p < .01$

Notes: (a) Correlations in box were factor-analyzed subsequently.

(b) Correlations in brackets are Spearman-Brown reliabilities.

Table 4 Factor Structure of the Scales for the Certificate-in-Education Students (N=52)

Scale	Unrotated factors		Rotated factors	
	F1	F2	F1	F2
Children	.49	.43	.65	.00
Discipline	.52	.45	.70	.00
Methods	.63	-.12	.40	.50
Administration	.66	-.35	.25	.70
Dogmatism	.28	-.39	.03	.55
Machiavellianism	.07	-.07	.00	.10
Per cent variance	24%	11%	17%	18%

STUDY II

The Respondents

The respondents of Study II were 58 female Diploma-in-Education students: 28 Arts (mean age 23 years, SD 1 year 1 month) and 30 Science (mean age 22 years 10 months, SD 1 year 6 months). At the time of testing, these students were nearly halfway through a one-year full-time programme. They had no teaching practice experience as organized by the Institute.

Results

Educational Attitude. As shown in Table 6, the mean for the Educational Attitude Scale as a whole is 76.24 (76% possible score), suggesting that the respondents were progressive in their view in general. For the four subscales, the means are 19.36 (77% possible score) for Children, 17.85 (71% possible score) for Discipline, 18.31 (73% possible score) for Methods, and 20.72 (83% possible score) for Administration. As shown in Table 7, the Z-ratios, between means indicate significant differences for some comparisons. The results of comparisons are summarized below,

with pairs of means underlined where a non-significant difference has been found:

Discipline Methods Children Administration

As has been found for the respondents in Study I, those in Study II were, in spite of their different educational and experiential backgrounds, progressive in their view where education in general was concerned. Where specific areas are concerned, they were most progressive in their views with regard to school administration, least so toward discipline, and moderately progressive regarding children and teaching methods.

Dogmatism. As shown in Table 6, the group scored 55.16 (55% possible score) on the Dogmatism Scale, indicating that they were somewhat closed-minded.

Machiavellianism. As shown in Table 6, the group scored 19.57 (39% possible score) on the Machiavellianism Scale, indicating that they were somewhat non-manipulative in their perception of people.

Table 6 Means, Standard Deviations and Per Cent Scores for Diploma-in-Education Students (N=58)

Scale	Mean	SD	Per Cent
Educational Attitude	76.24	8.28	76
Children	19.36	3.33	77
Discipline	17.85	3.76	71
Methods	18.31	2.80	73
Administration	20.72	3.16	83
Dogmatism	55.16	12.21	55
Machiavellianism	19.57	6.53	39

Table 7 Z-ratios for Educational Attitude Subscales for Diploma-in-Education Students (N=58)

Subscale	Children	Discipline	Methods	Administration
Children	—	2.109*	1.941	2.118*
Discipline			0.913	4.599**
Methods				5.766**
Administration				—

*p < .05

**p < .01

Correlations. As can be seen from Table 8, there are no significant correlations between Educational Attitude, Dogmatism and Machiavellianism, suggesting that these were independent of one another. Nonetheless, there are significant correlations between certain subscales of the Educational Attitude Scale. These are between Discipline and Methods, between Methods and Administration, though the Children Subscale is not related to any of the other subscales. In addition, Children and Methods correlate substantially with Dogmatism. Here again, Machiavellianism does not correlate with any of the subscales and the Dogmatism Scale.

Factor Structure. As shown in Table 9, factor analysis by the centroid methods yielded a general factor accounting for 27% variance and another bipolar factor accounting for 20% variance. After rotation for simple structure, the resultant first factor accounts for 28% variance with high loadings on Children (.85) and Dogmatism (.90). The second factor accounts for 19% variance and is defined by Discipline (.47), Methods (.74) and Administration (.53). Again, Machiavellianism does not appear on either factor.

Table 8 Correlation Coefficients and Reliabilities for Diploma-in-Education Students (N=58)

Scale	EA	C	D	M	A	DM	Mach
Educational Attitude (EA) (.785)	—	—	—	—	—	.133	.172
Children (C)		—	-.182	.105	-.136	.766**	.101
Discipline (D)			—	.341*	.064	-.081	.118
Methods (M)				—	.434*	.477**	.131
Administration (A)					—	.107	.085
Dogmatism (DM)						—	.193
Machiavellianism (Mach)							—

* $p < .05$

** $p < .01$

Notes: (a) Correlations in box were factor-analyzed subsequently.

(b) Correlations in brackets are Spearman-Brown reliabilities.

Table 9 Factor Structure of the Scales for Diploma-in-Education Students (N=58)

Scale	Unrotated factors		Rotated factors	
	F1	F2	F1	F2
Children	.50	-.72	.85	-.16
Discipline	.21	.44	-.18	.47
Methods	.69	.35	.25	.74
Administration	.23	.39	.00	.53
Dogmatism	.79	-.51	.90	.17
Machiavellianism	.29	.06	.16	.25
Per cent variance	27%	20%	28%	19%

DISCUSSION

The present study is an exploration of the relationships between educational attitude and two personality disposition measures that might have some influence on such attitudes namely, closed-mindedness and manipulative perception of people. In spite of the different educational and experiential backgrounds of the two *captive* samples, some interesting tendencies have been discerned. These are summarized and discussed below.

First, both groups of respondents indicated a rather progressive view towards education in general and, more specifically, toward children, teaching methods, discipline and school administration. They were most progressive with regard to school administration and least so in respect of discipline. In between these are attitudes concerning children and teaching methods.

Secondly, the respondents were found to be slightly closed-minded. They were however well within the normal range of dogmatism as suggested by the fact that almost all respondents scored not more than the 80% possible score (using two standard deviations above the mean as the upper bound). They were also found to be non-manipulative in their view of people, as suggested by the fact that almost all respondents scored not more than the 70% possible score (again, using two standard deviations above the mean as the upper bound).

These tendencies enable the drawing up of a typical student teacher representing the respondents: a teacher who believes in teacher-principal interaction and in her own ability to contribute to the well-being of the school; who is comfortable with children and appreciates their youthfulness and problems in learning and growing up; who sees the need to be flexible in her teaching so as to adjust to the pupils' abilities and learning processes; and who holds a somewhat progressive but not overly liberal view of classroom discipline.

Meanwhile, this teacher is not closed-minded though she would need some persuasion (who does not?) if new ideas were to be accepted by her. Perhaps more gratifying to know, she does not see people she is likely to come into contact with in the school as mainly of instrumental value; to her, people are people of value in and of themselves and not because they may be useful for some unheeded motives.

Thirdly, there are some positive correlations between closed-mindedness and educational attitude. At first glance, such relationships may be contrary to commonsense expectation. It is of note that in an earlier study (Soh, 1974), student teachers who scored higher on Dogmatism were

also found to hold more progressive attitudes toward children, discipline and teaching methods, when compared with those who scored lower. This however is contrary to what has been reported by Cohen (1971).

Such a paradox has to be understood with reference to Rokeach's (1960) contention that Dogmatism is a *system* (as contrasted with *ingredient*) variable. In other words, Dogmatism is functionally independent of content; Dogmatism influences the process of attitudinal change rather than the attitude itself. In this sense, high Dogmatism is indicative of high resistance to attempts to change the existing attitude, be it conservative or liberal, autocratic or democratic, traditional or progressive. Since Dogmatism is to be seen as a value-free, content-free system, it is not surprising at all that progressive educational attitudes of some sort correlate with closed-mindedness. In this case, Dogmatism should in fact be considered as "irrelevant" when value judgments pertaining to educational attitudes are considered. The correlations, nevertheless, suggest that it would be more difficult to bring about attitudinal changes in those aspects of school life for which correlations with Dogmatism have been found.

The factor structures obtained for the two groups of respondents suggest that they see school life as comprising two independent facets, namely, the pupil and the task. There are however some differences between the groups. For the Certificate students, discipline is a child-oriented problem while for the Diploma students, it is a task-oriented one. Moreover, teaching methods appear to be both child and task-oriented for the Certificate students, but only task-oriented for the Diploma students. The less clearcut factor structure for the Certificate students and the more distinct one for the Diploma students may well reflect their different perceptions of school life in different administrative set-ups and the pupils they teach.

Finally, that Machiavellianism does not correlate with any aspect of the Educational Attitude Scale invites some speculation. As pointed out by Smith (1972), Machiavellianism was validated by contrived experiments involving face-to-face interaction of strangers for short periods of time (from just a few minutes to a maximum of two groups). Such situations permit some possibility of improvisation and a "rapid" getaway and enable the highly Machiavellian person to remain more dispassionate and less emotionally involved. Obviously, this is a far cry from the typical classroom situation or school life in which continuous interpersonal encounters and a certain amount of emotional involvement constitute the norm.

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