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Student teacher anxieties related to practice teaching

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We investigated anxieties experienced by student teachers with regard to practice teaching. The Student Teacher Anxiety Scale (STAS) and Eysenck Personality Questionnaire (EPQ) were used to determine the relationship between student teachers' personalities and their anxiety levels. Three-way analysis of variance (Anova) was used to analyse the mean scores obtained on student teachers' biographical variables. The findings indicated that the dimension of neurotic personality is significantly correlated with professional preparation as well as with an unsuccessful lesson. The results also showed significant three-way interaction effects of student teachers' biographical variables (gender, age and grade placement) on practice-teaching related factors such as evaluation and an unsuccessful lesson. The findings are discussed and improvement on practice teaching suggested.

Introduction

Every student in a teacher education programme is expected to do practice teaching. Practice teaching serves as the pre-service teacher's initiation into the real-life world of the school. Research has shown that students are concerned about practice teaching (McBride, 1984: 41; Wendt & Bain, 1989:178; Behets, 1990:73). Empirical findings support the notion that a high level of anxiety among student teachers may be tied to various negative consequences such as class control problems and classroom disruptions. Preece (1979:18) found a correlation between student teacher anxiety and class control problems. Hart (1987:16) also reported a positive correlation between student teacher anxiety and classroom disruptions. Therefore anxiety appears to be a relevant characteristic of student teachers.

A number of studies in various countries have explored the extent to which student teachers experience anxiety from practice teaching-related factors. Some studies indicate that student teachers experience moderate levels of anxiety (Hart, 1987; Wendt & Bain, 1989; Behets, 1990; Capel, 1997; Morton, Vesco, Williams & Awender, 1997) while others show that student teachers report high anxiety levels (Thompson, 1963; Erickson & Russ, 1967; Singh, 1972; Bradley, 1984; Kazu, 2001).

Several studies have also looked at the nature of student teacher anxieties related to practice teaching. It was shown that student teachers in Great Britain experience anxiety from factors such as evaluation, pupil and professional concerns, class control and teaching practice requirements (Hart, 1987). In Canada, Morton *et al*. (1997) reported that student teacher anxieties were related to evaluation, pedagogical, classroom management and staff relations factors. Capel (1997) reported in her study that she conducted among student teachers in Canterbury that anxiety was due to evaluation, professional preparation, class control, and school staff factors.

Notably, student teacher anxiety factors related to practice teaching are common in many countries. These studies also reveal that student teachers world-wide are anxious about evaluation.

Researchers have noted that student teachers' perceptions of potential sources of anxiety related to practice teaching can vary greatly from individual to individual. They further assert that there are differential reactions to stressors as a function of variables such as personality (Fontana & Abouserie, 1993), culture or even sex (Magnusson, 1982).

In a study of student teachers who were attending a faculty of education at a Canadian University it was observed that females experienced higher levels of anxiety than males prior to practice teaching (Morton *et al*., 1997). Preece (1979) however, did not find sex-linked differences with regard to class control problems.

Problem statement

Very few, if any studies have addressed student teacher anxieties related to practice teaching in the Republic of South Africa, particularly among student teachers at historically black institutions. The present study, therefore, attempts to unravel the problem of the nature of anxieties related to student teacher practice teaching in a historically black institution in South Africa. More specifically, the present study attempted to find answers to these research questions:

1. To what extent is anxiety among student teachers evoked by practice-teaching related factors?
2. Is there any relationship between anxiety and student teachers' personality factors?
3. To what extent do student teachers' biographical variables such as gender, age and grade placement (GAP) interact to produce anxiety?

It is imperative to study the interaction of gender, age and grade placement (GAP) because of its irregularity in many research studies of this nature.

Concept clarification

In this study, the term student teacher is operationally defined to refer to a student who is doing pre-service training in teaching. Several authors have adopted this definition in their studies (Hourcade, Parette & McCormack, 1988; Ngcobo, 1995; Butler, 2001; Jianping, 2002). Anxiety in this study shall mean the nature of responses to a standardized anxiety scale called Student Teacher Anxiety Scale (STAS) (Capel, 1997; Morton *et al*., 1997). Practice teaching refers to the opportunity given to the student teacher to do teaching trials in a school situation. Practice teaching has always been defined in this context (Stone & Morris, 1972; Turney, 1977; Ngcobo, 1995). This is in contrast to micro-teaching which refers to opportunity given to the student teacher to teach a few fellow students in methods classes situations (Siedentop, 1981; Piek & Mahlangu, 1990).

Method

Aims of study

The present study aimed at achieving the following objectives:

1. To ascertain the extent to which student teachers experience anxiety with regard to practice-teaching related factors.
2. To determine whether there is any relationship between student teachers' personality factors and anxiety levels regarding practice-teaching related factors.
3. To examine interaction effects of student teachers' biographical variables (gender, age and grade placement) in relation to the nature of practice-teaching related factors.

Hypotheses

The following theoretical hypotheses were formulated:

1. Student teachers do not differ in the extent to which they experience anxiety from practice-teaching related factors.
2. No relationship exists between student teachers' personality factors and student teachers' anxiety levels on practice-teaching related factors.
3. There will be no interaction effects of student teachers' biographi-

cal variables (gender, age and grade placement) in relation to practice-teaching related factors.

Participants

Participants for this study were drawn from University of Zululand students who were registered for the Senior Secondary Teachers' Diploma (SSTD), University Education Diploma (UED) and University Primary Education Diploma (UPED). The participants had volunteered to participate in the study. This was done in accordance with accidental non-probability sampling design (Table 1).

Table 1 Distribution of participants in accordance with their biographical variables (N = 75)

Gender		Age in years		Type of diploma		
Male	Female	20–25	26 +	SSTD	UED	UPED
23	52	41	34	45	12	18

Measures

The research instrument consisted of three sections covering the aims of study. The first section consisted of student teachers' biographical information, namely: gender, age and type of diploma they were enrolled for. The second section consisted of the Student Teacher Anxiety Scale (STAS). The third section consisted of the Eysenck Personality Questionnaire (EPQ).

Student Teacher Anxiety Scale (STAS)

Previous studies have used the Student Teacher Anxiety Scale (STAS) as an instrument to measure student teacher anxieties related to practice teaching (Capel, 1997; Morton *et al*., 1997). This scale was developed by Hart (1987) using samples of student teachers in England. In order to validate STAS items, these studies use factor analysis for the purpose of identifying those items that tend to form clusters.

The original instrument used by Hart (1987) was retained but the instrument was modified in two ways. First, the wording was changed where necessary to make it amenable to a South African situation. Second, a five-point Likert-type scale rather than a seven-point scale was used. Respondents were asked to circle the number which best described how they perceived each of the statements with regard to practice teaching. The ratings were: very much (4), moderately (3), somewhat (2), rarely (1), never (0). The work of Morton *et al*., (1997) and Hart (1987) provided a framework for the construction of the instrument used in the present study.

A principal components factor analysis was run on the STAS using the Varimax rotation method. Items were assigned to their respective factors on the basis of factor loadings equal to and greater than 0.40. Emergent factors were termed: Evaluation anxiety; Class control anxiety; Professional preparation; School staff relations anxiety, and Unsuccessful lesson anxiety (Annexure A). The internal-consistency reliability for this study, measured by Cronbach's alpha was 0.88; 0.89; 0.83; 0.85 and 0.81 for Evaluation anxiety; Class control anxiety; Professional preparation; School staff relations anxiety, and Unsuccessful lesson anxiety, respectively. Data from these five factors, together with those from the respondents' biographical variables were used to meet the third aim of the study.

The STAS consists of 26 items. The highest possible score on this scale is $26 \times 4 = 104$ and the lowest possible score is $26 \times 0 = 0$. This continuum 0–104 was arbitrarily divided into three categories namely: 0–34 indicating low anxiety, 35–69 moderate anxiety and 70–104 high anxiety. Thus the respondent's summated score was classified accordingly into one of the three categories. This procedure yielded data to fulfil the first aim.

Eysenck Personality Questionnaire (EPQ)

This is a standardized instrument which measures four scales, namely: Neuroticism (N), Extraversion (E), Psychoticism (P) and Lie (L). For the purposes of this investigation, Neuroticism (with 23 items) and Extraversion (with 21 items) subscales were chosen. Literature shows that these two factors contribute more than the other two, to a description of personality (Eysenck & Eysenck, 1975:7; 1985:20). The use of EPQ has been extended to the Republic of South Africa (Adendorff, 1997; Ngidi, 1998). Adendorff (1997) established in her sample that internal consistency reliability, as measured by Cronbach's alpha, was 0.80 for Neuroticism and 0.67 for Extraversion. In his sample, Ngidi (1998) established an internal consistency reliability of 0.85 for Neuroticism and 0.76 for Extraversion. The EPQ was used to meet the second aim of the present study.

Procedures

In this field, the instrument is administered during any of the three stages of practice teaching. That is, during the practice teaching period (Placek & Silverman, 1983; Behets, 1990; Davis, 1990; Paese & Zinkgraf, 1991), during and after practice teaching (Capel, 1997); as well as before and after practice teaching (Preece, 1979; Morton *et al*., 1997). In the present study, two weeks of lesson observation in schools preceded practice teaching.

Results

The chi-square test indicated that no significant difference was found among Low Anxiety, Moderate Anxiety and High Anxiety groups. This finding showed that student teachers did not differ in the way they experience anxiety from practice-teaching-related factors.

Table 2 Respondents grouped according to anxiety levels

Anxiety levels		
Low	Moderate	High
19	33	23
$\chi^2 = 0.12$	df = 2	$p > 0.05$

Table 3 illustrates the results of analysis for the second aim. It shows the correlation coefficients of personality dimensions and practic-teaching related factors. The dimension of neurotic personality is significantly correlated with professional preparation ($r = 0.22$, $p < 0.05$) (Cohen's $d = 0.5$) (Cohen, 1988) and an unsuccessful lesson ($r = 0.31$, $p < 0.00$) (Cohen's $d = 0.7$). For the Cohen's d values of 0.5 and 0.7, the amount of variance in the dependent variables that can be predicted from the independent variable are 4.8 % and 9.6 %, respectively. This means that student teachers who manifest neurotic personality are prone to anxiety caused by professional preparation and an unsuccessful lesson, respectively. The extraversion personality dimension is not significantly correlated with any of the factors.

Table 3 Correlation between practice-teaching related factors and Extraversion/Neuroticism

	Practice-teaching related factors				
	1	2	3	4	5
Personality	Evaluation	Class control	Professional preparation	Staff relations	Unsuccessful lesson
Extraversion	–0.06	–0.08	–0.08	0.04	–0.11
	0.63	**0.49**	**0.52**	**0.74**	**0.33**
Neuroticism	0.20	0.11	0.22	0.12	0.31
	0.09	**0.31**	**0.05**	**0.30**	**0.01**

Bold type indicates level of confidence: $p < 0.05$

Table 4 illustrates the interaction effects of student teachers' characteristics in relation to the nature of practice-teaching related factors. A three-way analysis of variance (Anova) was performed with regard

to this third aim. Only significant interactions were reported. The two-way interactions, namely, gender and age (GA) yielded significant mean scores (F = 9.08; 4.64; 4.71, $p < 0.03$) (partial Eta squared = 0.119; 0.065 and 0.066) in relation to evaluation, class control and an unsuccessful lesson, respectively. This means that using partial Eta squared as the measure of association (effect size), the interaction between gender and age accounted for 12%; 7%; and 7% of the total variance in relation to evaluation, class control and an unsuccessful lesson, respectively.

Table 4 ANOVA for practice-teaching related anxiety factors

Source	Evaluation	Class control	Professional preparation	Staff relations	Unsuccessful lesson
Gender × Age (GA)	9.08 **0.00**	4.64 **0.03**			4.71 **0.03**
Gender × Age (GA) × Placement (GAP)	5.15 **0.03**				3.94 **0.05**

Bold type indicates level of confidence: $p < 0.05$

Table 4 also shows significant three-way interaction (GAP) effects regarding the factors of evaluation and an unsuccessful lesson (F = 5.15; 3.94, $p < 0.05$) (partial Eta squared = 0.071 and 0.056), respectively. This means that using partial Eta squared as the measure of association, the GAP interaction accounted for 7% and 6% of the total variance in relation to evaluation and an unsuccessful lesson, respectively. The significant three-factor interaction (GAP) can be interpreted by considering the graphical representation of the evaluation cell mean scores (Figure 1) and unsuccessful lesson cell mean scores (Figure 2).

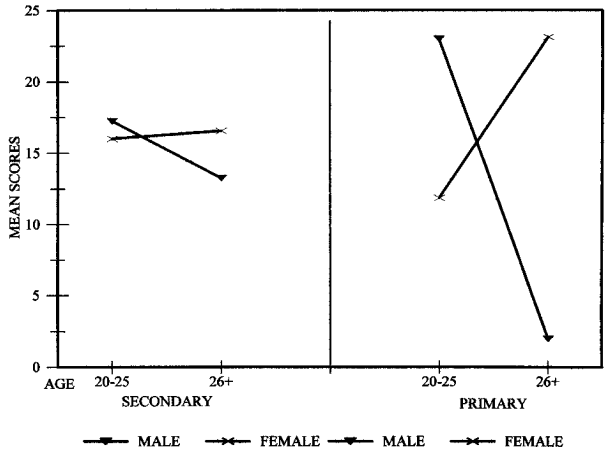

Figure 1 GAP interaction — Factor 1

Figure 1 reveals that the interaction between gender and age differs for the different groups of student teachers, namely those who are placed at secondary schools and those who are at primary schools. It shows further that evaluation mean score increases more sharply with an increase in age for female student teachers placed at primary schools than for those at secondary schools.

For the secondary school student teachers group, the evaluation score decreases steadily with an increase in age for males while it increases steadily for females. For the primary school student teachers group, the evaluation mean score decreases sharply for males with an increase in age, whilst for the females it increases sharply.

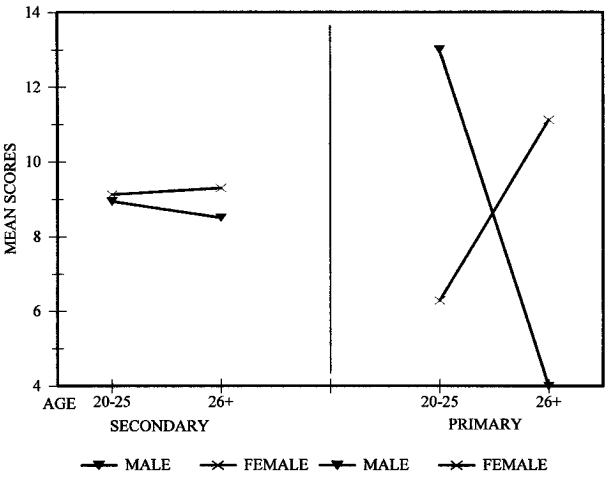

Figure 2 GAP interaction — Factor 5

The conclusion is that GAP has a significant influence on student teachers' perceptions of evaluation. This interaction is significant beyond the 0.05 level. This GAP interaction means that the younger male student teachers who are placed at primary schools experience anxiety from evaluation more than other groups.

Figure 2 reveals that the interaction between gender and age differs for the different groups of student teachers, namely those who are placed at secondary schools and those at primary schools.

Figure 2 shows also that the mean score for the unsuccessful lesson group in secondary schools increases for females and decreases for males, with an increase in the age of the student teachers. In the case of student teachers in primary schools, the mean score decreases sharply for males while the opposite holds for females.

The GAP interaction has a significant influence on student teachers' perceptions of unsuccessful lesson and anxiety level. This interaction is significant beyond the 0.05 level.

Discussion

The research findings revealed that student teachers do not differ in the extent to which they experience anxiety from factors related to practice teaching. Nonetheless, a higher percentage of student teachers (44%) reported a moderate level of anxiety compared to those who reported a low level (25%) and those with high levels (31%). These findings support the results of previous studies which have shown student teachers to be moderately anxious and concerned about practice teaching (Hart, 1987; Wendt & Bain, 1989; Behets, 1990; Capel, 1997). A two-week period of lesson observation in schools might have helped to reduce anxiety among student teachers in the present study.

Another finding is that neurotic personality does cause anxiety related to professional preparation and an unsuccessful lesson. This indicates that neurotic, rather than stable student teachers, appear to be more prone to anxiety related to professional preparation and an unsuccessful lesson. These findings cast light on how student teachers' personality characteristics relate to specific practice-teaching related anxiety factors. Previous studies have shown that teachers' personality dimensions relate to specific work-related stress factors (Ngidi, 1998). In the same vein, personality factors cause anxiety for pre-service teachers.

The findings show that gender, age and grade placement interactions influence student teachers' perception of evaluation. Younger male student teachers placed at primary schools experience relatively greater anxiety resulting from evaluation than older males at primary schools, the younger males at secondary schools and older males at secondary schools. The anxiety they report is even greater than that for

the female group, regardless of age and grade placement. This suggests that younger male student teachers placed at primary schools, are anxious about evaluation lessons. It is not clear why this group of student teachers are so much concerned about evaluation than others. One possible explanation may be that there are few young male teachers at primary schools. Young male student teachers who are placed at primary schools may therefore fear that there will be no male teachers of their age to turn to for support when they are practising at those schools.

Another finding relates to the interaction of gender and age in relation to class control. Older female student teachers experience greater anxiety with regard to class control than younger females. Whether old or young, males show less anxiety than older females. The older female group is anxious about class control. The reason for this state of affairs may be that older female student teachers are more concerned about caring for learners, as they do with their own children.

An interesting finding concerns the interaction between gender, age and grade placement in relation to an unsuccessful lesson. It reveals that younger male student teachers who are placed at primary schools experience greater anxiety related to both an unsuccessful lesson and evaluation. They are overly anxious about evaluation lessons. This group of male teachers is young and may have no or few male teachers of their own age at primary schools. This may deprive them of the opportunity of consulting with their peers with regard to teaching-related help.

Conclusion

Given the interaction effects of gender, age and grade placement in relation to evaluation and an unsuccessful lesson, there appears to be a need for tertiary institutions to inform student teachers about what is expected of them during practice teaching, i.e. briefing. Effective supervision and guidance from subject teachers at their schools of placement can also play an important role in reducing anxiety among student teachers. Another solution might be an unbroken internship or induction to practice teaching on a piecemeal basis. Furthermore, these findings imply that demonstration lessons, on the part of supervisors, cannot be a once-off event.

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Annexure A

Sources of anxiety on the STAS: loadings greater than 0.50 on Varimax rotated factors

	Item No.	Loading	Variance
Factor 1: Evaluation Anxiety			
I am anxious about how helpful members of the school staff will be	7	0.72	
I am anxious about assessment by the lecturer	24	0.66	
I am anxious about what lesson the lecturer would come in to see	26	0.66	
I am anxious about being observed by my lecturer while teaching	2	0.64	
I am anxious about how the practice teaching will go in my lecturer's eyes	6	0.61	
I am anxious about getting all the paperwork done in time	25	0.58	
I am anxious about what my lecturer will expect	12	0.57	
I am anxious about maintaining a good enough standard of preparation	23	0.43	**46.9%**
Factor 2: Class control anxiety			
I am anxious about class control	4	0.81	
I am anxious about setting work at the right level for the learners	3	0.78	
I am anxious about how to give each learner the attention he/she needs without neglecting others	1	0.73	
I am anxious about whether or not my performance will be satisfactory from the point of view of the subject teacher	5	0.54	**6.4%**
Factor 3: Professional preparation anxiety			
I am anxious about maintaining a 'buoyant' enough approach	20	0.76	
I am anxious about completing lesson plans in the required form	10	0.67	
I am anxious about whether or not my lesson plans will be adequate	8	0.58	
I am anxious about how to handle defiance from a learner	22	0.55	**5.5%**
Factor 4: School staff anxiety			
I am anxious about controlling the noise level in the class	17	0.82	
I am anxious about co-operation with the school staff	21	0.65	
I am anxious about getting on with the school staff	11	0.61	
I am anxious about selecting suitable lesson content	19	0.58	
I am anxious about whether the principal will be happy with my work	16	0.50	**5.0%**
Factor 5: Unsuccessful lesson anxiety			
I am anxious about how the lecturer will react to one or more unsuccessful lessons if they should occur	14	0.83	
I am anxious about incidents of misbehaviour in class	13	0.67	
I am anxious about how the subject teacher will react to one or more unsuccessful lessons if they should occur	18	0.59	
I am anxious about possible problems in the class with individual disruptive learners	9	0.56	
I am anxious about whether or not I will cover the material adequately	15	0.49	**4.5%**