Effect of Gender, Social Conformity and Mastery of Environment on Performance Anxiety of D.El.Ed. Students

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Abstract—**The purpose of this investigation was to find out the effect of gender, social conformity and mastery of environment on performance anxiety of D.El.Ed. students of Kerala. The study tested three null hypotheses by collecting data from 316 pre-service elementary school teachers (male = 44; female = 272). The instrumentation part of the study utilized the Social Conformity Sub-scale and the Mastery of Environment Sub-scale of the Mental Health Scale for Pre-service Elementary School Teachers and the Performance Anxiety Scale for Pre-service Elementary School Teachers, all developed by the investigators. Data analysis was accomplished by employing independent sample t-test, linear regression analysis and three-way factorial ANOVA. The results showed that gender has no significant differential effect on the performance anxiety of D.El.Ed. students. The influences exerted by both social conformity and mastery of environment on performance anxiety are significant. Whereas gender has no significant main effect on performance anxiety, social conformity and mastery of environment exert significant main effect on performance anxiety of teacher trainee. While gender exert significant effect on performance anxiety of D.El.Ed. students in interaction with their social conformity, the effect exerted by gender on performance anxiety in interaction with mastery of environment is not significant. Social conformity and mastery of environment have significant interaction effect on performance anxiety of D.El.Ed. students.**

Index Terms—**Performance anxiety, social conformity, Mastery of environment, Interaction effect.**

I. INTRODUCTION

Teaching can be convincingly debated as being an art or a science or defined collectively as an art and a science. It is the artistic part of teaching that differentiate a successful teacher from an unsuccessful teacher. A teachers' success is the result of a complex interaction of task characteristics, personal characteristics, and the classroom setting (Toropova, Myrberg & Johansson, 2021). Pre-service teacher education is the most important phase in the professional development of teachers. It is the most critical and challenging phase in career of a teacher. Teacher preparation places significant demands on teachers' physical and mental health (Corrente, Ferguson & Bourgeault, 2022). In order to excel in the profession, teachers require three elements working in tandem: teaching competence, optimal physical wellbeing, and optimal mental wellbeing (OECD, 2020). Mental health is a critical component of overall well-being and significantly impacts an individual's quality of life and satisfaction. Studies have reported high incidence of mental health problems among students of higher education in recent years (e.g., Campbell, Blank & Cantrell, 2022; Sheldon, Simmonds-Buckley & Bone, 2021). Performance anxiety, including text anxiety, is one of the most debilitating factors that contribute to academic failure, unhappiness, and mental health problems in college students (Thiriveedhi, Myla, Priya, Vuppuluri, Dulipala & Vudathaneni, 2023).

Performance anxiety is the fear of performing or presenting in front of an audience, and it can occur in various situations such as taking classes, public speaking, taking exams, or performing on stage (Rowland, Moyle & Cooper, 2021). Performance anxiety is a common problem for both experienced teachers and pre-service teachers (Han & Tulgar, 2019). The anxiety experienced by pre-service teachers, especially during their practice teaching significantly affects their teaching performance in a detrimental manner. Mental health and performance anxiety are closely related, as performance anxiety is

a type of anxiety disorder that can significantly impact mental health. As conceived today, mental health is a composite concept, and many of the mental health factors are related variously to performance anxiety, mediated by many of the person's psycho-social factors. Research evidences are not available to show the manner in which the various mental health components affect the performance anxiety of prospective teachers. In this context, a modest attempt was made to examine the effect of two of the components of mental health, viz., social conformity and mastery of environment, on performance anxiety of D.El.Ed. students of Kerala.

II. OBJECTIVES

The specific objectives of the study were:
1) To find out the differential effect of gender on performance anxiety of D.El.Ed. students of Kerala.
2) To find out the influence of social conformity and mastery of environment on performance anxiety of D.El.Ed. students of Kerala.
3) To find out the main effects and interaction effect of social conformity and mastery of environment on performance anxiety of D.El.Ed. students of Kerala.

Hypotheses
The following null hypotheses were tested for the study:
1) Gender has no significant differential effect on the performance anxiety of D.El.Ed. students of Kerala.
2) Social conformity and mastery of environment have no significant influence on performance anxiety of D.El.Ed. students of Kerala.
3) Gender, social conformity, and mastery of environment have no significant main effect and interaction effect on performance anxiety of D.El.Ed. students of Kerala.

III. METHODOLOGY

The descriptive study employed normative survey method. The population under study consists of second-year preservice primary school teachers, doing their Diploma Course in Elementary Education (D.El.Ed.) at various Institutes of Teacher Education (ITE) affiliated with SCERT (Kerala government) and recognised by National Council for Teacher Education (NCTE, Govt. of India), located within the revenue boundary of Kerala, India. The data were collected from a stratified random sample of 316 second year D.El.Ed. students (male = 44; female = 272) drawn from different ITEs located in Wayanad, Kannur and Kasaragod districts of Kerala (India). The variables Social Conformity and Mastery of Environment were two sub-scales in the Mental Health Scale for Pre-service Elementary School Teachers (MHS) developed by Saumya and Afeef (2022). The MHS has a criterion validity of 0.73 and split-half reliability of 0.79. The performance anxiety of the sample was measured with the help of the Performance Anxiety Scale for Pre-service Elementary School Teachers (PASPET) (Saumya & Afeef, 2022). The PASPET is a 40-item, five-point Likert-type scale covering five dimensions; (1) Affective Manifestations, (2) Autonomic Arousal, (3) Behavioural Manifestations, (4) Cognitive Manifestations, and (5) Somatic Manifestations. The items are to be rated on five-point, viz., Strongly Agree, Agree, Neither Agree nor Disagree, Disagree and Strongly Disagree. The criterion validity of the PASPET is 0.77 and the split-half reliability of 0.84. The data required for the study were collected partly by administering the tools online with the help of Google Forms, and partly by administering the instruments directly in group situation. A Personal Data Sheet was also administered to collect the demographic information needed for the study. The response sheets and the Google Forms were scored after scrutiny of their completeness and the scores were consolidated on Excel sheet and analysed subsequently with the help of SPSS. The inferential statistical techniques used were independent sample t-test, linear regression analysis, and three-way factorial ANOVA.

Analysis and Interpretation
The important statistical indices such as Mean (M), Median (Mdn), Standard Deviation (σ), Skewness (Sk), Kurtosis (Ku), and Standard error of Mean (SE_M) estimated from the scores of performance anxiety scores for the entire sample and gender-based sub-samples of D.El.Ed. students are given in Table 1.

Table 1: Statistical indices pertaining to performance anxiety scores of D.El.Ed. students

Sample	N	Range	M	Mdn	σ	Sk	Ku	SE$_M$
Total	316	56	92.63	93.0	11.75	-0.084	-0.690	0.66
Males	44	58	89.64	89.5	13.38	0.455	-0.19	2.02
Females	272	53	93.12	94.0	11.42	-0.171	-0.736	0.69

The results of descriptive analysis show that the group under study is heterogeneous with regard to their performance anxiety as the range estimated for the entire sample is 56. The highest score obtained is 121 and lowest score obtained is 65, out of a maximum of 200 and minimum score of 40. The mean of the performance anxiety scores of the total sample is 92.63, with a standard deviation of 11.75. The estimated median (93.0) in very close to the arithmetic mean. The value of skewness estimated for the total group is very small (Sk = -0.084) and since its value lies between -½ and +½, the distribution is symmetrical. The standard error of mean (SE$_M$) for estimated for the total sample is 0.98. The distributions of the performance anxiety scores for the gender based sub-samples also assumes normality as the skewness estimated for male and female trainees are negligible. The male and female trainees were compared with respect to their performance anxiety scores so as to find out the significant difference, if any, between the groups. Table 2 presents the data and result of the independent sample t-test performed in this regard.

Table 2: Comparison of the PASPET scores of male and female teacher trainees

Groups	Statistical Indices				t-value	Sig.
	N	M	SD	SE$_M$		
Male	44	89.64	13.377	2.017	1.830	NS
Female	272	93.12	11.422	.693		

The t-value estimated on comparing the performance anxiety scores of male and female D.El.Ed. students is not significant (t = 1.830; p>.05). It shows that gender is not a significant factor that discriminate D.El.Ed. students on the basis of their performance anxiety.
In order to find out the influence of Social Conformity (SC) on Performance Anxiety (PA) of D.El.Ed. students, linear regression analysis was performed by taking social conformity as the predictor variable and performance anxiety as criterion variable. The Model Summary of the linear regression analysis performed is presented in Table 3.

Table 3: Model summary of linear regression analysis (SC X PA)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.518a	.268	.266	10.072
a. Predictors: (Constant), SC				

The value of R^2 estimated for the model shows that 26.6% of the total variation in the dependent variable (performance anxiety) can be explained by the predictor variable (social conformity). One way analysis of variance was then performed to find out the significance of the influence exerted by social conformity on performance anxiety, and data and result of the same is given in Table 4.

Table 4: Data and result of ANOVA[b] for testing the significance of variance in the outcome variable

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11655.242	1	11655.242	114.891	.001[a]
	Residual	31854.176	314	101.446		
	Total	43509.418	315			
a. Predictors: (Constant), SC						
b. Dependent Variable: PA						

The F-ratio estimated is significant beyond 99.9% confidence interval exposing that the regression model predicts the performance anxiety of D.El.Ed. students significantly well (F = 114.891; p<.001). To put differently, the predictor variable (social conformity) has significant influence on the criterion variable (performance anxiety).

The influence of Mastery of Environment (ME) on Performance Anxiety (PA) of the D.El.Ed. students was explored by performing linear regression analysis by taking mastery of environment as predictor variable and performance anxiety as criterion variable. Table 5 presents the Model Summary of the linear regression analysis done in this regard.

Table 5: Linear Regression Analysis (ME X PA): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.556a	.309	.307	9.783
a. Predictors: (Constant), ME				

The R-square estimated for the model shows that 30.7% of the total variation in the performance anxiety of D.El.Ed. students can be explained by their mastery of environment. One way ANOVA was subsequently performed to examine the significance of the influence exerted by mastery of environment on performance anxiety; the data and result of the same is given in Table 6.

Table 6: Data and result of ANOVA[b] for testing the significance of variance in the outcome variable

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13456.320	1	13456.320	140.594	.001[a]
	Residual	30053.098	314	95.711		
	Total	43509.418	315			
a. Predictors: (Constant), ME						
b. Dependent Variable: PA						

The F-ratio obtained is significantly higher than 99.9% confidence interval, revealing the significance of the regression model in predicting the performance anxiety (F = 97.184; p<.001). In another words, mastery of environment has significant influence on performance anxiety of D.El.Ed. students.

In order to find out the main effect and interaction effect of Gender (GE) Social Conformity (SC) and Mastery of Environment (ME) on Performance Anxiety of D.El.Ed. students, three-way ANOVA was carried out. Table 7 presents the result of the 2X3X3 factorial ANOVA performed in this context.

Table 7: Summary of factorial ANOVA for performance anxiety of D.El.Ed. students
Dependent variable: PA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	17276.913a	14	1234.065	14.160	.000	.397
Intercept	362063.416	1	362063.416	4.154E3	.000	.932
GE	301.439	1	301.439	3.459	.064	.011
SC	909.539	2	454.770	5.218	.006	.034
ME	1220.455	2	610.228	7.002	.001	.044
GE * SC	1082.268	2	541.134	6.209	.002	.040
GE * ME	173.930	2	86.965	.998	.370	.007
SC * ME	951.270	3	317.090	3.638	.013	.035
GE * SC * ME	537.701	2	268.850	3.085	.047	.020
Error	26232.505	301	87.151			
Total	2755060.000	316				
Corrected Total	43509.418	315				
a. R Squared = .397 (Adjusted R Squared = .369)						

The result of the three-way ANOVA carried out to find out the main effect and interaction effect of Gender (GE), Social Conformity (SC) and Mastery of Environment (ME) on the Performance Anxiety (PA) of D.El.Ed. students, reveals the following: (i) the main effect of gender on performance anxiety of D.El.Ed. students is not significant (F = 3.459; p>.05); (ii) social conformity exerts significant main effect on performance anxiety (F = 5.218; p<.01); (iii) the main effect of mastery of environment on performance anxiety is also significant (t = 7.002; p<.001); (iv) though social conformity has significant effect on performance anxiety of the teacher trainee in interaction with gender (F = 6.209; p<.01), the interaction effect of gender with mastery of environment on performance anxiety is not significant (F = 0.998; p>.05), (v) social conformity and mastery of environment has significant interaction effect on performance anxiety of D.El.Ed. students (F = 3.638; p<.01), and (vi) gender in interaction with social conformity and mastery of environment exert significant effect on performance anxiety of D.El.Ed. students.

The Scheffe's post-hoc test was further performed to find out whether teacher trainee with high, average and low levels of social conformity differ in their performance anxiety. The result (not presented here)

showed significant difference among D.El.Ed. students in different levels of social conformity with respect to their performance anxiety. The estimated means of performance anxiety for teacher trainee with high, average and low levels of social conformity differ significantly. The higher levels of social conformity, lower will be the level of performance anxiety of D.El.Ed. students. Likewise, significant difference was also found to exists in the performance anxiety of teacher trainee with high, average and low levels of mastery of environment. Higher the level of mastery of environment, lower will be the level of performance anxiety.

IV. CONCLUSIONS

The analysis brought out that there is no true difference between male and female D.El.Ed. students regarding their performance anxiety (t = 1.830; p>.05). The hypothesis formulated in this context *(gender has no significant differential effect on the performance anxiety of D.El.Ed. students of Kerala),* is therefore, accepted. The predictor variables, social conformity and mastery of environment, are responsible respectively 26.6% and 30.7% variability in performance anxiety of D.El.Ed. students. The influences exerted by both social conformity (F =

114.891; p<.001) and mastery of environment (F = 97.184; p<.001) on performance anxiety are significant. The hypothesis *(social conformity and mastery of environment have no significant influence on performance anxiety of D.El.Ed. students of Kerala)* formulated in this regard is, hence, rejected. While gender has no significant main effect on performance anxiety of D.El.Ed. students (F = 3.459; p>.05), social conformity (F = 5.218; p<.01) and mastery of environment (F = 7.002; p<.01) have significant main effect on performance anxiety of teacher trainee. Whereas gender exert significant effect on performance anxiety of D.El.Ed. students in interaction with their social conformity (F = 6.209; p<.01), the effect exerted by gender on performance anxiety in interaction with mastery of environment is not significant (F = 0.998; p>.05). The independent variables (social conformity and mastery of environment) have significant interaction effect on performance anxiety of D.El.Ed. students (F = 3.638; p<.01). It exposes that mean scores of performance anxiety of D.El.Ed. students in different of levels of social conformity having different levels of mastery of environment differ significantly. Prospective elementary school teachers having higher levels of social conformity and higher mastery of environment have significantly lesser performance anxiety when compared to their fellow students with average or low levels of social conformity, having average or low mastery of environment.

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