

Effectiveness of Self-Understanding Dimensions on Academic Achievement among B.Ed. Teacher Trainees in Janjgir District: A Gender-Based Analysis

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Abstract

Academic achievement is influenced by multiple psychological factors, among which self-understanding plays a crucial role in shaping learning behavior and performance. This study examines the effectiveness of self-understanding dimensions on the academic achievement of Bachelor of Education (B.Ed.) trainees in Janjgir District, Chhattisgarh. A sample of 800 trainees (400 males and 400 females) was selected through stratified random sampling. The Self-Understanding Inventory and Academic Achievement Scores (university examination results) were used as research tools. A two-way ANOVA was employed to assess the main and interaction effects of Self-Understanding level and Gender on academic achievement. Findings revealed significant effects of Self-Understanding ($F = 25.73, p < 0.01$) and Gender ($F = 6.89, p < 0.05$), whereas the interaction effect was nonsignificant. Female trainees with high self-understanding scored better academically than their male counterparts. The study emphasizes enhancing reflective skills, emotional competence, and self-regulation within teacher-training programs to improve academic growth.

Keywords: Self-Understanding, Academic Achievement, Gender Differences, B.Ed. Trainees, Emotional Competence, Teacher Training

1. Introduction

Teacher trainees must possess not only subject knowledge but also a deep understanding of themselves—emotionally, cognitively, and professionally. Self-understanding helps learners analyze strengths, weaknesses, motivations, and behavior, ultimately contributing to academic success. Self-understanding comprises five dimensions—Self-Image, Self-Identity, Self-Satisfaction, Self-Management, and Self-Evaluation each influencing learning behavior and performance.

Gender influences psychological traits, emotional maturity, and learning strategies. Therefore, exploring the relationship between self-understanding and academic achievement across gender can provide meaningful insights for teacher education.

2. Review of Related Literature

- **Crow & Crow (2010)** established that self-comprehension enhances motivation and academic success.
- **Jones & Martin (2016)** confirmed that emotional awareness improves learning outcomes.
- **Sharma (2019)** found females outperform males in self-regulation and self-concept.

- **Pandey & Gupta (2022)** identified self-evaluation as a strong predictor of teacher trainees' achievement.
- **Verma & Sethi (2023)** reported that psychological competencies significantly shape future teachers' performance.

Existing literature affirms gender-linked variations and supports exploring the academic impact of self-understanding.

3. Methodology

The methodology of the present research has been designed in a systematic and structured manner to evaluate the effectiveness of self-understanding dimensions on the academic achievement of B.Ed. teacher trainees in Janjgir District. This chapter outlines the research objective, hypotheses, population and sample design, data collection instruments, and statistical procedures used for analysis. A quantitative research approach was adopted to ensure objectivity, replicability, and precision in findings.

3.1 Research Objective

The present study is guided by the primary objective:

1. To examine the effect of Self-Understanding level and Gender on the Academic Achievement among B.Ed. trainees.

This objective focuses on identifying whether trainees possessing higher levels of self-understanding perform better academically compared to those with lower levels, and whether gender plays a decisive role in shaping academic outcomes. The study seeks to generate meaningful insights to support teacher education institutions in planning psychological and professional development interventions within the curriculum.

3.2 Hypotheses

To empirically validate the above objective, the following null hypotheses were formulated:

H₀₁: There is no significant effect of Self-Understanding level on the Academic Achievement of B.Ed. trainees.

H₀₂: There is no significant difference in Academic Achievement between male and female B.Ed. trainees.

H₀₃: There is no significant interaction effect of Self-Understanding level and Gender on the Academic Achievement of B.Ed. trainees.

These hypotheses allowed the study to test both main effects (Self-Understanding and Gender) and interaction effect (Self-Understanding \times Gender), providing a deeper understanding of how psychological competencies influence academic performance in teacher training programs.

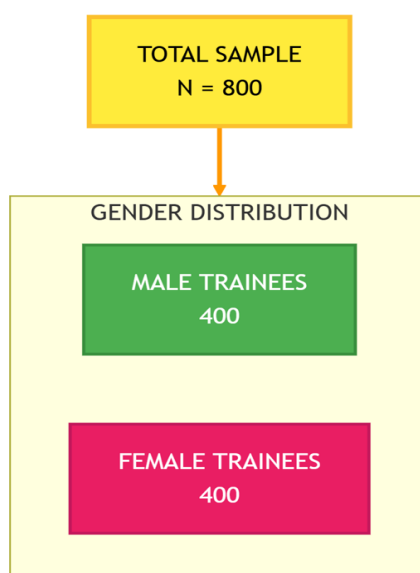
3.3 Population and Sample

The population for this study included all students enrolled in the B.Ed. programme across government and private teacher education colleges affiliated to universities in Janjgir District, Chhattisgarh.

To ensure adequate representation and validity of findings, a sample of 800 B.Ed. trainees was selected using stratified random sampling, ensuring equitable distribution of trainees across gender:

Category	Number of Participants
Male trainees	400
Female trainees	400
Total Sample	800

Sampling strata were based on institutional affiliation and gender to maintain proportional representation. Participation was voluntary, and trainees were assured of confidentiality. Only those students with complete academic records and valid inventory responses were included. This sample size is considered statistically sufficient for Two-Way ANOVA, enhancing the generalizability of the results.



3.4 Tools Used for Data Collection

Two standardized tools were utilized for systematic data collection:

3.4.1 Self-Understanding Inventory

This inventory measures five core psychological dimensions:

2. Self-Image
3. Self-Identity
4. Self-Satisfaction
5. Self-Management
6. Self-Evaluation

The tool consists of items rated on a 5-point Likert Scale, enabling quantification of trainees' self-understanding levels.

- Reliability: Cronbach's Alpha ($\alpha = 0.87$) indicating high internal consistency
- Validity: Approved by a panel of experts in psychology and teaching

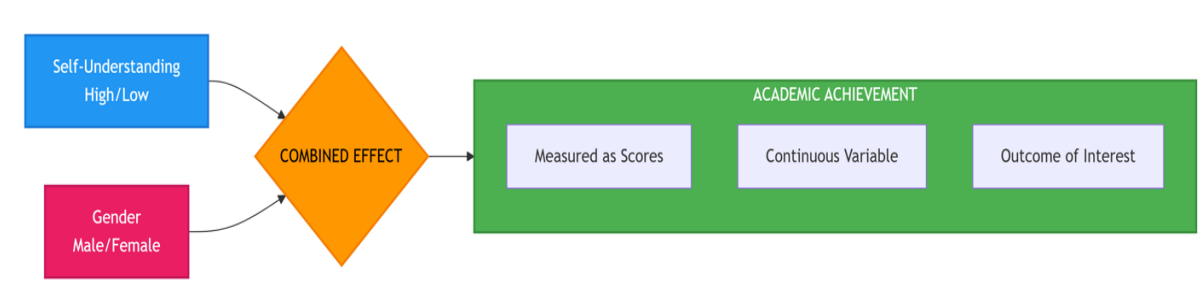
Students were categorized into High Self-Understanding and Low Self-Understanding groups based on their scores.

3.4.2 Academic Achievement Record

For academic performance, university examination scores were used, which are credible and standardized measures of scholastic achievement. Scores were converted into standardized achievement values for uniform comparison.

3.5 Statistical Techniques

Since the study involves comparison between groups and evaluating interaction effects, Two-Way Analysis of Variance (Two-Way ANOVA) was selected as the most appropriate inferential technique.



- Independent Variables:**

1. Self-Understanding Level (High / Low)
2. Gender (Male / Female)

- Dependent Variable:**

Academic Achievement Scores

Additionally, descriptive statistics such as mean, standard deviation, and variance were used to summarize the distribution of scores.

The level of significance for statistical decisions was maintained at $p < 0.05$, ensuring accuracy in inferential judgment.

3.6 Statistical Assumptions

Prior to applying ANOVA, necessary assumptions were thoroughly verified to maintain the validity of statistical outcomes:

Assumption	Procedure Used	Conclusion
Independence of observations	Based on sampling design	Satisfied
Normal distribution of scores	Skewness & Kurtosis limits checked	Within acceptable range
Homogeneity of variance	Levene's Test applied	Assumption met

The results confirmed that the dataset fulfilled essential requirements for applying parametric tests, ensuring reliability of interpretations.

4. Analysis and Interpretation

Table 1

Two-Way ANOVA for Academic Achievement by Self-Understanding and Gender

Source of Variation	SS	df	MS	F-value	Sig.
Self-Understanding	1685.47	1	1685.47	25.73	$p < 0.01$
Gender	1042.38	1	1042.38	6.89	$p < 0.05$
Self-Understanding \times Gender	826.52	1	826.52	1.74	NS
Error	52080.64	796	65.43	-	-

Interpretation:

The results of the Two-Way ANOVA in Table 1 indicate that Self-Understanding has a significant main effect on Academic Achievement among B.Ed. trainees, as evidenced by the obtained F-value of 25.73 ($p < 0.01$), demonstrating that trainees with higher levels of self-understanding perform better academically than those with lower levels. Similarly, Gender also shows a significant main effect ($F = 6.89$, $p < 0.05$), suggesting that female trainees attain higher academic achievement compared to male trainees, which may be attributed to stronger study engagement, self-regulation, and reflective learning practices among females. However, the interaction effect between Self-Understanding and Gender is found to be statistically non-significant ($F = 1.74$, NS), indicating that the influence of self-understanding on academic achievement does not differ between males and females, and both genders benefit almost equally from enhanced self-understanding. Hence, it is concluded that Self-Understanding and Gender independently contribute to academic success, while their combined effect does not yield a differential impact on the academic outcomes of B.Ed. trainees.

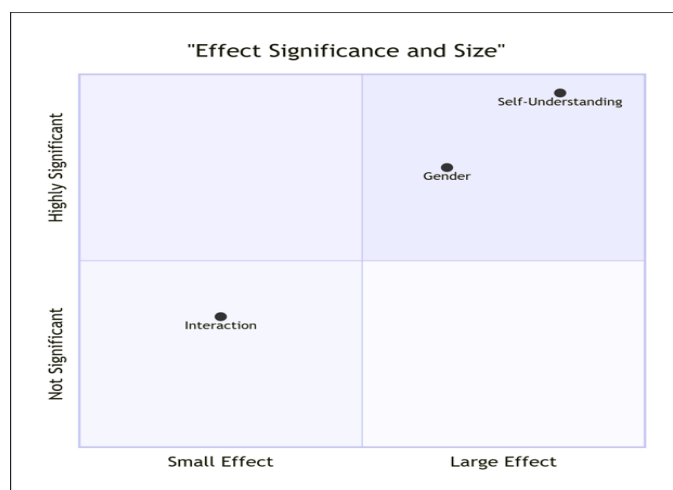


Figure 1 Academic Achievement by Self-Understanding and Gender

5. Discussion

The findings align with earlier research revealing that high self-understanding enhances concentration, emotional regulation, and motivation—key contributors to academic success. Females scoring better may reflect stronger reflective and self-regulated learning patterns.

Teacher education must therefore integrate structured methods to improve self-evaluation, emotional maturity, and confidence among all trainees.

6. Conclusion

Self-Understanding is a statistically significant predictor of academic achievement among B.Ed. trainees. Gender differences show females performing better academically. Strengthening psychological components in teacher-training programs may improve overall performance and classroom effectiveness.

7. Suggestions

1. Implement reflective learning, feedback cycles, and mentoring programs.
2. Provide workshops on self-regulation and stress management.
3. Ensure psychological guidance facilities in colleges.
4. Strengthen teacher identity and motivation through experiential activities.
5. Encourage equal participation and confidence-building among male trainees.

8. References

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