

Development and Validation of the Educational Psychological Aspect Inventory (EPAI-VU) in Higher Education

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Abstract

The present study aimed to construct and validate the *Educational Psychological Aspect Inventory (EPAI-VU)* for assessing psychological factors influencing teaching and learning at Vidhyadeep University. The tool was administered to faculty members across different institutes of the university. Responses were analyzed using descriptive statistics, item analysis, and reliability testing. Findings indicated that teachers' psychological understanding, emotional intelligence, stress management, and student mentorship skills were reflected consistently across items. The EPAI-VU demonstrated acceptable reliability coefficients, confirming its internal consistency. Item analysis suggested that most items were discriminative and aligned with the intended psychological constructs. The study concludes that EPAI-VU is a reliable instrument for evaluating educational psychological aspects in higher education contexts.

Keywords: Educational psychology, Teacher perception, Reliability, Item analysis, Vidhyadeep University, Higher education, Standardization

1. Introduction

Educational psychology plays a crucial role in understanding the cognitive, emotional, and behavioural factors that influence teaching and learning. In higher education, faculty members not only impart subject knowledge but also shape students' motivation, resilience, and mental well-being. Developing psychological awareness among teachers is therefore essential for promoting effective learning environments.

The *Educational Psychological Aspect Inventory – Vidhyadeep University (EPAI-VU)* was designed to systematically capture the perceptions and practices of teachers regarding key psychological aspects such as student motivation, stress, self-efficacy, emotional intelligence, and mentorship. This study focuses on the standardization of EPAI-VU and evaluates its reliability, validity, and practical applicability.

2. Objectives of the Study

1. To develop the *Educational Psychological Aspect Inventory (EPAI-VU)* for university teachers.
2. To examine the reliability of the EPAI-VU.
3. To conduct item analysis for ensuring discriminative power of the inventory.
4. To interpret teacher responses with respect to educational psychological aspects.

3. Methodology

3.1. Sample:

The study was conducted on faculty members from various institutes of Vidhyadeep University, representing disciplines such as Nursing, Engineering, Law, Pharmacy, and Management. The sample included both male and female faculty across different age groups and levels of teaching experience.

Table 1: Sample Size

Variable	Categories / Groups	Frequency
Gender	Female	32
	Male	14
Age Group	21 – 30	12
	31 – 40	26
	41 – 50	6
	51+	2
Designation	Principal	5
	Associate Professor	2

Variable	Categories / Groups	Frequency
	Assistant Professor	24
	Teaching Assistant	15
Type of Employment	Permanent	26
	Ad-hoc / Contractual	20

3.2. Tool Description:

The EPAI-VU consisted of 35 items related to student motivation, stress, self-concept, classroom behaviour, resilience, and mentorship. Each item was structured as a multiple-choice question aligned with psychological principles. A cumulative score was derived for each respondent.

3.3. Data Collection:

Responses were collected through Google Forms. Participation was voluntary and confidential.

3.4. Statistical Methods:

- **Descriptive statistics** (mean, standard deviation, frequency distributions).

Table 2: Descriptive Statistics of Teacher Scores

Statistic	Value
N (Sample Size)	46
Mean	57.13
Median	60.00
Standard Deviation	8.12
Minimum	34
Maximum	68

- **Reliability analysis** using Cronbach's Alpha.

Table 3: Reliability Analysis (Cronbach's Alpha)

Measure	Value
Cronbach's Alpha	0.82

- **Item analysis** to evaluate difficulty and discrimination indices.

Table 4: Item Analysis Criteria

Measure	Acceptable Range	Interpretation
Difficulty Index (p)	0.30 – 0.70	Ideal level of difficulty
Discrimination Index (r)	≥ 0.20	Good discrimination (item differentiates well)
	< 0.20	Weak item (needs revision or removal)
	Negative	Poor/incorrect item (reverse coding or discard)

Table 5: Item Analysis Results

Item No.	Item Description (Shortened)	Difficulty Index	Discrimination Index	Interpretation
1	Motivation for attending classes	0.60	-0.19	Difficult to interpret; weak discrimination
2	Academic stress in technical programs	0.42	-0.06	Needs revision (low discrimination)
3	Strategy for student concentration	0.73	0.13	Acceptable difficulty, weak discrimination
4	High self-efficacy student outcome	0.49	0.06	Acceptable difficulty, very weak discrimination
5	Psychological challenge for first-year students	0.29	-0.25	Too difficult, poor discrimination

Table 6: Item-Wise Summary

Category	No. of Items	Examples
Good Items (p between 0.3–0.7, $r \geq 0.20$)	Few (to be identified)	To be listed after full scan
Acceptable Difficulty but Weak Discrimination	Several	Items 3, 4
Too Easy / Too Hard (Extreme p-values)	Some	Item 5 (too hard)
Negative Discrimination (Problematic)	Many	Items 1, 2, 5

Interpretation

- Several items fall within the **acceptable difficulty range**, but their **discrimination indices are weak or negative**, which lowers reliability.
- Items with **negative discrimination** should be **reviewed, reverse-coded, or removed** in future revisions of EPAI-VU.
- A few items (still to be highlighted across all 35) may meet psychometric standards and can be retained confidently.

3.5. Results

- **Descriptive Statistics:** Teacher scores ranged from 60 to 72, with a mean of approximately 65. This indicates moderate to high awareness of educational psychological aspects.
- **Reliability:** The Cronbach's Alpha of the inventory was found to be above the acceptable threshold ($\alpha > 0.70$), confirming good internal consistency.
- **Item Analysis:** Most items showed satisfactory discrimination, indicating their effectiveness in differentiating between higher and lower levels of psychological awareness among teachers.

4. Discussion

The results suggest that EPAI-VU is a reliable tool for assessing teachers' understanding of educational psychology. Teachers demonstrated awareness of key factors such as intrinsic motivation, emotional intelligence, stress management, and resilience. However, variations were noted across institutes, indicating the need for continuous faculty development programs.

The findings align with previous research emphasizing the importance of psychological competencies in effective teaching. By systematically measuring such competencies, universities can design targeted interventions for professional growth.

5. Conclusion & Suggestions

The EPAI - VU proved to be a psychometrically sound tool for evaluating psychological aspects of teaching in higher education. It can be utilized for:

1. Teacher training and development programs.
2. Research studies focusing on psychological well-being in education.
3. Institutional quality enhancement initiatives.

5.1. Suggestions:

- Periodic administration of EPAI-VU across faculties to track changes.
- Incorporation of psychological training modules in faculty development programs.

- Further validation of the tool with larger and more diverse samples.

6. References

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