

Effect of Frequent Testing on Test Anxiety in Adolescents

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ABSTRACT— Frequent testing has become a dominant feature of contemporary schooling, justified by claims that it improves retention, provides continuous feedback, and raises achievement. Yet, the same practice is frequently blamed for escalating stress and anxiety—especially among adolescents who are navigating developmental, social, and academic pressures simultaneously. This manuscript investigates the relationship between test frequency and test anxiety in secondary school students (ages 13–18). Drawing on cognitive load theory, self-determination theory, and appraisal-based models of anxiety, the study explores how assessment density, perceived stakes, feedback quality, and classroom climate interact to influence anxiety levels. A mixed-method design was employed: a cross-sectional survey of 420 adolescents from government and private schools, focus group discussions with 36 students, and teacher interviews (n = 18).

Quantitative data were analyzed using multiple regression and mediation analysis, while qualitative data were coded thematically. Results indicate that frequent low-stakes quizzes, when paired with formative feedback and autonomy-supportive practices, correlate with lower reported anxiety and improved self-efficacy. Conversely, frequent high-stakes tests with punitive grading policies exacerbate anxiety, particularly among students with low prior achievement and perfectionistic tendencies. The paper concludes with recommendations for balanced assessment schedules, feedback-rich environments, and socio-emotional learning supports to mitigate test anxiety without sacrificing continuous monitoring of learning outcomes.

KEYWORDS

frequent testing; test anxiety; adolescents; formative assessment; high-stakes exams; self-efficacy; cognitive load; school climate

INTRODUCTION

Testing has long served as both a diagnostic and accountability mechanism in education. Over the last two decades, however, the frequency and stakes of testing have intensified. Standardized assessments, weekly unit tests, and pop quizzes have become routine in many secondary schools. For adolescents—already negotiating identity formation, peer acceptance, and hormonal changes—this sustained evaluative pressure may translate into heightened anxiety. Test anxiety, characterized by physiological arousal, worry, and cognitive

Anxiety levels based on Westside Test Anxiety Scale (N=205)

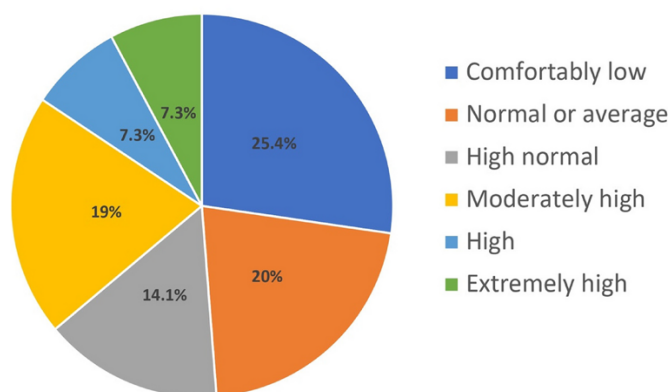


Fig.1 Frequent Testing on Test Anxiety, [Source\(\[1\]\)](#)

interference during evaluative situations, can impair performance and well-being. At the same time, spaced retrieval and frequent practice tests are evidence-based strategies for memory consolidation. This duality poses a critical question: Under what conditions does frequent testing alleviate or aggravate test anxiety in adolescents.

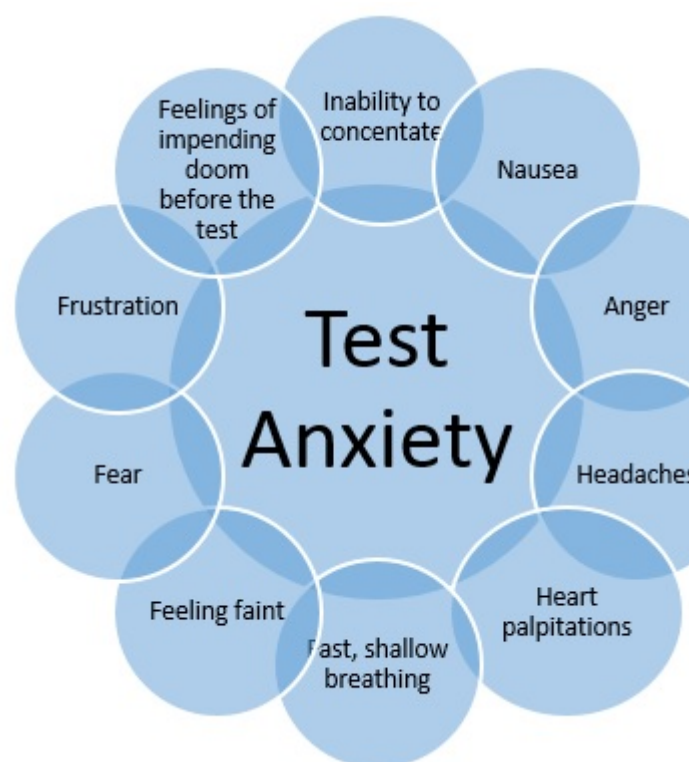


Fig.2 Test Anxiety, [Source \[21\]](#)

This study positions itself at the intersection of learning sciences and educational psychology, seeking to disentangle how the design, purpose, and communication of tests influence anxiety. It argues that frequency per se is not inherently harmful; rather, the interaction of frequency with perceived stakes, feedback quality, autonomy, and classroom relational dynamics determines its psychological impact. By investigating these nuanced relationships, the manuscript contributes actionable insights for educators, curriculum designers, and policymakers striving to balance accountability with student well-being.

Objectives of the Study

1. To examine the correlation between frequency of testing and levels of test anxiety among adolescents.
2. To identify moderating variables (e.g., perceived stakes, feedback type, autonomy support) that influence this relationship.
3. To explore students' subjective experiences of frequent testing through qualitative narratives.
4. To propose assessment design principles that minimize anxiety while maintaining pedagogical effectiveness.

Significance

Understanding the psychological cost of assessment practices is essential in contexts where mental health concerns among adolescents are rising. By offering empirical evidence and practical recommendations, this study informs school assessment policies and teacher professional development programs.

LITERATURE REVIEW

Defining Test Anxiety

Test anxiety is commonly conceptualized as a multi-dimensional construct comprising worry (cognitive concerns about performance and consequences) and emotionality (physiological arousal). Cognitive interference theories suggest that anxious thoughts consume working memory resources, hampering problem solving and recall. Among adolescents, these cognitive effects are often amplified by social comparison and fear of parental or teacher disappointment.

Frequency of Testing: Benefits and Risks

Research on retrieval practice demonstrates that frequent testing can enhance long-term retention and transfer of learning. Low-stakes quizzes prompt students to study regularly, distribute practice, and receive timely feedback. However, when tests are frequent and consequential—

affecting grades, promotion, or streaming decisions—the cumulative stress may outstrip any cognitive benefits.

The Role of Stakes and Feedback

High-stakes assessments are associated with performance-avoidance goals, fear of failure, and heightened anxiety. In contrast, formative assessments that emphasize mastery, provide constructive feedback, and allow for revision foster performance-approach or mastery goals. The literature indicates that feedback that is specific, task-focused, and growth-oriented can buffer the anxiety induced by frequent evaluations by shifting the emphasis from judgment to improvement.

Autonomy Support and Classroom Climate

Self-determination theory posits that autonomy, competence, and relatedness are critical for intrinsic motivation and psychological well-being. When students perceive control over pacing, test format choices, or opportunities to retake assessments, the anxiety associated with frequent testing diminishes. Likewise, a supportive classroom climate—characterized by empathy, clear expectations, and non-comparative feedback—reduces evaluative threat.

Individual Differences

Perfectionism, prior academic achievement, gender, and socio-economic status moderate anxiety responses. Students with high trait anxiety or maladaptive perfectionism are more vulnerable to frequent evaluative situations. Conversely, students with strong academic self-concepts may experience frequent tests as manageable challenges.

Cultural and Systemic Contexts

In exam-centric education systems, frequent testing often coincides with intense parental expectations and competitive school cultures. The social meaning attached to scores can heighten anxiety independent of test frequency. Cross-cultural studies suggest that collectivist contexts may emphasize family honor and group comparison, intensifying evaluative stress.

Gaps in the Literature

While many studies explore either retrieval practice benefits or test anxiety determinants, fewer integrate both perspectives to examine the conditional effects of test frequency. Additionally, adolescent voices—the lived experiences and coping strategies—are underrepresented. This study addresses these gaps through a mixed-methods approach.

METHODOLOGY

Research Design

A convergent mixed-methods design was adopted. Quantitative and qualitative data were collected concurrently, analyzed separately, and then integrated for interpretation. This approach allowed for statistical examination of relationships while grounding findings in student narratives.

Sample and Sampling

- **Participants:** 420 adolescents (grades 8–12; ages 13–18) from six urban secondary schools (three government, three private). Gender distribution: 52% female, 47% male, 1% non-binary/others.
- **Teachers:** 18 teachers (three per school) participated in semi-structured interviews.
- **Focus Groups:** 6 student focus groups (6 students each; total $n = 36$) representing varied achievement levels.

Stratified random sampling ensured representation across school type and grade level.

Instruments

1. **Test Frequency Index (TFI):** A 10-item scale capturing number and type of tests per month (low-stakes quizzes, unit tests, standardized exams). Reliability $\alpha = 0.82$.
2. **Test Anxiety Inventory–Adolescent Short Form (TAI-A-SF):** 20 items measuring worry and emotionality dimensions. Reliability $\alpha = 0.89$.

3. **Perceived Stakes Scale (PSS):** 8 items assessing how much each test “matters” to grades, parental approval, or promotion.
4. **Feedback Quality Rubric (FQR):** Student-reported measure of specificity, timeliness, and usefulness of feedback ($\alpha = 0.80$).
5. **Autonomy Support Scale (ASS):** Adapted from existing SDT measures ($\alpha = 0.83$).
6. **Interview and Focus Group Guides:** Open-ended questions about experiences with frequent testing, coping strategies, and preferences.

Data Collection Procedures

After institutional permissions and parental consent, surveys were administered during school hours. Focus groups were audio-recorded and transcribed verbatim. Teacher interviews were conducted after school hours and recorded with consent.

Data Analysis

- **Quantitative:** Descriptive statistics, Pearson correlations, and hierarchical multiple regression were conducted to test the relationship between TFI and TAI scores, controlling for gender, grade, and prior achievement. Mediation analyses tested whether perceived stakes and feedback quality mediated the TFI–anxiety relationship.
- **Qualitative:** Thematic analysis using an inductive coding approach. Two coders independently coded transcripts; inter-rater reliability $\kappa = 0.78$. Themes were triangulated with quantitative findings.

Ethical Considerations

Confidentiality was ensured through anonymized data. Participation was voluntary, with the option to withdraw at any time. Emotional support resources were provided for students who reported high anxiety.

RESULTS

Descriptive Findings

- Mean monthly test frequency: 6.4 assessments (SD = 2.1), of which 3.8 were low-stakes quizzes.
- Average test anxiety score (TAI): 54.2 (SD = 11.7) on a 0–80 scale. Females reported slightly higher anxiety (M = 56.3) than males (M = 52.1), though differences were modest.

Correlational Analysis

- TFI correlated weakly but positively with TAI ($r = .18, p < .01$), indicating that more frequent testing is associated with slightly higher anxiety overall.
- Perceived stakes (PSS) showed a stronger correlation with anxiety ($r = .42, p < .001$).
- Feedback quality (FQR) correlated negatively with anxiety ($r = -.31, p < .001$).

Regression and Mediation

In hierarchical regression, after controlling for demographics and prior achievement, TFI significantly predicted anxiety ($\beta = .12, p = .03$). When PSS and FQR were added, TFI's effect dropped to non-significance ($\beta = .05, p = .21$), while PSS ($\beta = .36, p < .001$) and FQR ($\beta = -.24, p < .001$) remained significant. Mediation analysis (bootstrapped CI) indicated that perceived stakes partially mediated the TFI–anxiety relationship, and feedback quality acted as a suppressor variable, mitigating anxiety.

Qualitative Themes

1. **“It’s Not the Number, It’s the Weight”:** Students differentiated between pop quizzes (“we just brush up and move on”) and term tests (“my parents will ask my rank”).
2. **Feedback as Reassurance:** Timely, specific feedback reduced worry (“When I know what I did wrong, I’m less scared next time”).

3. **Autonomy and Predictability:** Choice in retakes or knowing the testing schedule in advance reduced anxiety (“Surprise tests make my heart race”).
4. **Cumulative Fatigue:** Even low-stakes quizzes, when clustered, created a sense of constant evaluation (“There is never a break—every week something”).
5. **Peer and Parent Pressure:** Social comparison and fear of disappointing parents intensified anxiety, independent of frequency.

3. **Offer Autonomy and Recovery Opportunities:** Allow retakes, alternative assessment modes, and student input into scheduling.
4. **Balance Frequency with Breathing Space:** Avoid clustering multiple assessments in short windows; coordinate across subjects.
5. **Support Socio-Emotional Skills:** Teach anxiety management strategies (mindfulness, cognitive restructuring) alongside academic content.

Integration of Findings

Quantitative data established that frequency alone explains a small portion of anxiety variance; qualitative data illuminated how contextual factors (stakes, feedback, autonomy) shape the emotional meaning of tests. Together, they suggest that mindful design—not sheer reduction of tests—is key to anxiety mitigation.

CONCLUSION

Frequent testing is a double-edged sword in adolescent education. On one edge, it can deepen learning through spaced retrieval, promote regular study habits, and provide continual diagnostic information. On the other, it risks engendering chronic anxiety when tests are high-stakes, poorly scaffolded, or embedded in punitive classroom cultures. The present study demonstrates that the psychological impact of frequent testing is mediated by perceived stakes and moderated by feedback quality and autonomy support. Thus, educators should:

1. **Prioritize Low-Stakes, Feedback-Rich Assessments:** Emphasize mastery and growth rather than comparison and punishment.
2. **Clarify Purpose and Stakes:** Communicate how each test will (or will not) affect grades, placement, or reporting to parents.

Limitations

Cross-sectional data limit causal inference. Self-report measures are vulnerable to social desirability bias. The sample was urban and may not generalize to rural or alternative education settings. Future longitudinal research should examine how changes in assessment design over time affect anxiety trajectories.

Implications for Policy and Practice

School policies should distinguish between formative and summative assessments, cap the cumulative weight of frequent tests, and require timely, constructive feedback. Teacher training must include socio-emotional assessment literacy. Mental health professionals should collaborate with educators to design anxiety-sensitive assessment calendars.

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