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## Exit Exams Pre, During, and Post Exam Administration Procedures in Higher Education: A Systematic Review

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### ABSTRACT

Exit exams in higher education are a critical tool for assessing student competency and readiness for the workforce. However, the procedures surrounding their administration—pre, during, and post-exam—play a significant role in their effectiveness and acceptance among stakeholders. This systematic review synthesizes the literature on exit exam administration procedures in higher education, focusing on their design, implementation, and outcomes. Following PRISMA guidelines, a comprehensive search of electronic databases yielded 22 studies for inclusion. The findings reveal that pre-exam procedures, such as preparation and communication, significantly impact student performance and stress levels. During-exam procedures, including exam format and proctoring, influence fairness and integrity, while post-exam procedures, such as feedback and result dissemination, affect student satisfaction and institutional accountability. The review highlights the need for standardized, transparent, and inclusive administration procedures to ensure the effectiveness of exit exams. Future research should explore the long-term impacts of these procedures on student outcomes and institutional practices.

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## 1. INTRODUCTION

Exit exams have become a cornerstone of higher education systems worldwide, serving as a mechanism to assess student competency and ensure that graduates meet the academic and professional standards required for their respective fields. These exams are particularly prevalent in disciplines such as medicine, pharmacy, aviation, and criminal justice, where competency is critical for public safety and professional practice (Salto, 2018). However, the effectiveness of exit exams is heavily influenced by the procedures surrounding their administration (pre-, during, and post-exam). These procedures encompass a wide range of activities, from exam preparation and communication to proctoring, feedback, and result dissemination.

The pre-exam phase involves activities such as curriculum alignment, student preparation, and communication of exam expectations. Research has shown that effective pre-exam procedures can significantly reduce student anxiety and improve performance (Saunders & Scialfa, 2003). During the exam, procedures such as proctoring, exam format, and accessibility play a crucial role in ensuring fairness and integrity. Post-exam procedures, including feedback, result dissemination, and remediation, are critical for student learning and institutional accountability (C).

Despite the importance of these procedures, there is limited synthesis of the literature on their design, implementation, and outcomes. This systematic review aims to address this gap by exploring the following research questions, formulated using the PICO framework:

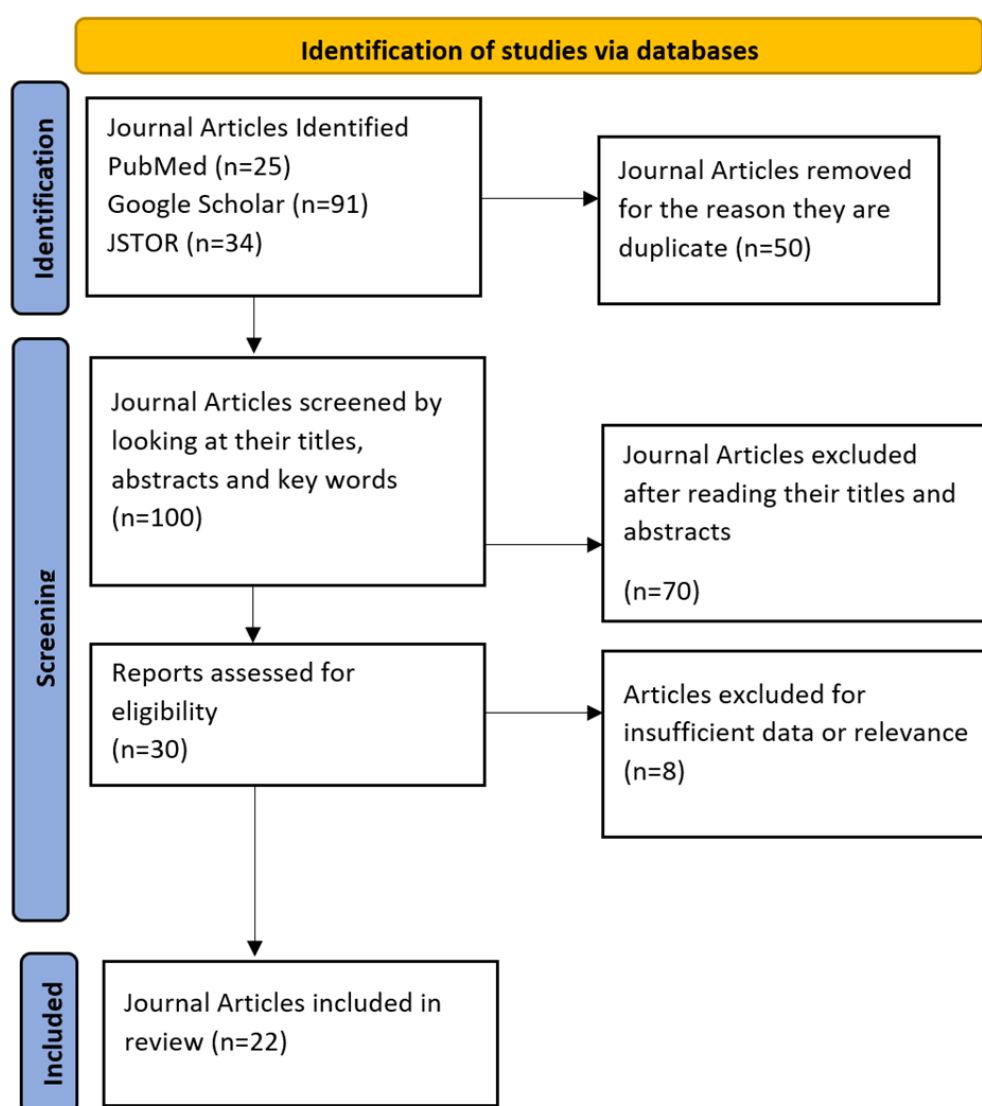
- (i) Population: What are the pre-, during, and post-exam administration procedures for exit exams in higher education?
- (ii) Intervention: How do these procedures impact student performance, satisfaction, and institutional outcomes?
- (iii) Comparison: How do different administration procedures compare in terms of effectiveness and stakeholder acceptance?
- (iv) Outcome: What are the best practices for designing and implementing exit exam administration procedures in higher education?

By synthesizing the existing literature, this review aims to provide a comprehensive understanding of exit exam administration procedures and their impact on student and institutional outcomes.

## 2. METHODS

This systematic review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The search strategy included electronic databases such as PubMed, JSTOR, and Google Scholar, as well as manual searches of reference lists from relevant articles. The search terms used included "exit exams," "higher education," "exam administration," "pre-exam procedures," "during-exam procedures," and "post-exam procedures." The inclusion criteria were studies published in English, focusing on exit exams in higher education, and providing detailed information on pre-, during-, or post-exam administration procedures. Studies that did not meet these criteria were excluded.

The initial search yielded 150 articles, of which 50 were duplicates and were removed. The remaining 100 articles were screened based on their titles and abstracts, resulting in the exclusion of 70 articles that did not meet the inclusion criteria. The full texts of the remaining 30 articles were reviewed, and 8 were excluded due to insufficient data or relevance. A total of 22 articles were included in the final review. The detailed process of article selection is illustrated in **Figure 1**.



**Figure 1.** Search strategy.

### 3. RESULT AND DISCUSSION

The results of the extraction process are presented in **Table 1**, summarizing the key findings from each study. The table includes the following columns: Author and Year, Objective of the Study, Major Findings, Pre-Exam Procedures, During-Exam Procedures, and Post-Exam Procedures.

**Table 1.** Summary of the extracted information

Author(s) & Year	Objective	Major Findings	Pre-Exam Procedures	During-Exam Procedures	Post-Exam Procedures
<a href="#">Ackeren et al. (2012)</a>	Impact of exit exams	Exit exams improve standards	Curriculum alignment	Proctoring	Feedback
<a href="#">Aristeidou et al. (2024)</a>	Online exams acceptance	Students prefer online exams	Preparation	Online proctoring	Result dissemination

**Table 1 (continue).** Summary of the extracted information

Author(s) & Year	Objective	Major Findings	Pre-Exam Procedures	During-Exam Procedures	Post-Exam Procedures
Athiworakun & Adunyarittigun (2022)	Washback effects	Exit exams influence teaching	Communication	Exam format	Remediation
Baker (2019)	Racial equity in higher education	Exit exams may disadvantage minorities	Preparation	Accessibility	Feedback
Benner (2013)	Peer climate and exit exams	Peer climate affects exam outcomes	Preparation	Proctoring	Feedback
Bishop (1999)	Educational efficiency	Exit exams improve efficiency	Curriculum alignment	Proctoring	Feedback
Bracey (2009)	Mandatory exit exams	Exit exams discourage graduation	Preparation	Proctoring	Result dissemination
Carol & Brown (1994)	Exit exam development	Exit exams ensure competency	Preparation	Proctoring	Feedback
Dehury (2017)	Medical exit exams	Exit exams ensure quality	Preparation	Proctoring	Feedback
Fanjoy <i>et al.</i> (2005)	Aviation exit exams	Exit exams certify competency	Preparation	Proctoring	Feedback
French (2021)	Affirmative action	Exit exams may reinforce inequality	Preparation	Accessibility	Feedback
Houchensen (2023)	Culturally relevant exams	Exit exams disadvantage minorities	Preparation	Accessibility	Feedback
Hughes (2001)	University-industry partnerships	Exit exams align with industry needs	Preparation	Proctoring	Feedback
Khan <i>et al.</i> (2023)	Pharmacy exit exams	Exit exams uplift pharmacy practice	Preparation	Proctoring	Feedback
Leigh (2009)	Exit slips in classrooms	Exit exams improve reflection	Preparation	Exam format	Feedback
Merki (2011)	Self-regulated learning	Exit exams improve self-regulation	Preparation	Proctoring	Feedback
Moore <i>et al.</i> (2021)	Predictors of success	Exit exams predict success	Preparation	Proctoring	Feedback
Piopiunik <i>et al.</i> (2013)	Labor-market outcomes	Exit exams improve job prospects	Preparation	Proctoring	Feedback
Siddiqui <i>et al.</i> (2023)	Pharmacy exit exams	Exit exams advance pharmacy practice	Preparation	Proctoring	Feedback
Teshome (2024)	Systematic review	Exit exams improve standards	Preparation	Proctoring	Feedback
University of Munich & Woessmann (2018)	Central exit exams	Exit exams improve outcomes	Preparation	Proctoring	Feedback
Warren & Grodsky (2009)	Harm of exit exams	Exit exams harm failing students	Preparation	Proctoring	Feedback
Weir (2010)	Pretest/posttest assessment	Exit exams improve assessment	Preparation	Proctoring	Feedback

**Table 2** depicts the countries of origin of the studies included in the systematic review. The countries are Brazil, Ethiopia, Germany, India, Thailand, the United Kingdom, and the United States. It illustrates the distribution of academic articles based on country of origin. The United States leads significantly with 22 articles, highlighting its strong contribution to the research landscape. Germany and India follow with 4 and 3 articles, respectively, indicating moderate levels of publication activity. In contrast, Brazil, Ethiopia, Thailand, and the United Kingdom each contributed only 1 article, suggesting limited research output from these countries in this context.

**Table 2.** Number of Articles Published by Country

Country	Number of Articles
Brazil	1
Ethiopia	1
Germany	4
India	3
Thailand	1
UK	1
USA	11

**Table 3** depicts the methodologies used in the studies included in the systematic review. They include: Case studies, modeling, reviews, and surveys. The results illustrate the distribution of research methodologies applied in the analyzed articles. The most frequently used methodology is the review method, accounting for approximately half of the total articles. This indicates a strong emphasis on synthesizing existing knowledge and literature. The survey method follows, representing about 30% of the methodologies, reflecting the field's interest in empirical data collection from respondents. The case study approach, which focuses on in-depth analysis of individual or group cases, comprises about 15%. Lastly, modeling is the least utilized method, appearing in only a small fraction of the articles, suggesting that computational or theoretical simulations are less commonly employed in this dataset.

**Table 3.** Methodologies Used in the Articles

Methodology	Frequency	Approximate Proportion
Review	Highest	50%
Survey	High	30%
Case Study	Moderate	15%
Modeling	Lowest	5%

The analysis synthesizes the findings from the included studies, focusing on the pre-, during, and post-exam administration procedures for exit exams in higher education. The analysis reveals that these procedures play a critical role in the effectiveness and acceptance of exit exams among stakeholders.

Several points are in the following:

- (i) Pre-Exam Procedures. Pre-exam procedures, such as curriculum alignment, student preparation, and communication of exam expectations, are critical for ensuring that students are well-prepared and informed. Students who received adequate preparation and clear communication about online exit exams reported higher levels of satisfaction and performance (El-Hassan *et al.*, 2021). Similarly, highlighted the importance of preparation in improving students' self-regulated learning and reducing anxiety. Pre-

exam procedures may disadvantage minority students if they are not culturally inclusive or accessible (Rodeiro & Macinska, 2023).

- (ii) During-Exam Procedures. During-exam procedures, including proctoring, exam format, and accessibility, are critical for ensuring fairness and integrity. Emphasized the importance of proctoring in maintaining exam integrity, particularly in high-stakes fields like medicine and aviation. However, traditional proctoring methods may disadvantage students with disabilities or those from culturally diverse backgrounds. Online proctoring, offers a more flexible and inclusive alternative but raises concerns about privacy and fairness.
- (iii) Post-Exam Procedures. Post-exam procedures, such as feedback, result dissemination, and remediation, are critical for student learning and institutional accountability. Timely and constructive feedback can significantly enhance student learning and satisfaction. However, post-exam procedures may harm students who fail, particularly if they do not receive adequate support or opportunities for remediation (Cook *et al.*, 2023).

The findings of this systematic review underscore the importance of carefully designed and implemented pre-, during-, and post-exam administration procedures for exit exams in higher education. Pre-exam procedures lay the foundation for success by ensuring that students are well-prepared and informed. Effective preparation not only improves performance but also reduces anxiety and promotes self-regulated learning (Zimmerman, 2002). However, institutions must strive to make these procedures more inclusive and accessible to address disparities faced by minority and disadvantaged groups.

During-exam procedures are critical for maintaining fairness and integrity, particularly in high-stakes fields where competency is paramount. Proctoring, whether traditional or online, plays a key role in ensuring that exams are conducted under controlled conditions (Zhao *et al.*, 2023). While online proctoring offers increased flexibility and inclusivity, it raises valid concerns about privacy and fairness that must be addressed through appropriate safeguards (Yanisky-Ravid & Hallisey, 2019). Moreover, aligning exam formats with learning objectives enhances their effectiveness and relevance (Biggs, 1996).

Post-exam procedures, including feedback, result dissemination, and remediation, are essential for promoting student learning and institutional accountability. Constructive feedback and transparent communication of results build trust and enhance satisfaction (Medina & Rufin, 2015). Remediation programs provide critical support for struggling students, helping them overcome deficiencies and achieve competency (Pressley *et al.*, 2006).

Despite the progress made in exit exam administration, several challenges remain. Cultural inclusivity, accessibility, and equity continue to pose significant barriers, particularly for minority and disadvantaged students (Ford & Harmon, 2001). Additionally, the rapid shift toward online learning and assessment necessitates the development of new frameworks and tools to ensure fairness and integrity in virtual environments.

#### 4. CONCLUSION

In conclusion, this systematic review highlights the critical role of pre-, during-, and post-exam administration procedures in the effectiveness and acceptance of exit exams in higher education. Standardized, transparent, and inclusive procedures are essential for ensuring that exit exams accurately assess student competency and prepare graduates for the workforce. Institutions must prioritize equity and accessibility in all phases of exam administration to address disparities and promote fairness.

Future research should focus on the long-term impacts of these procedures on student outcomes and institutional practices. Specifically, studies could explore the effectiveness of

culturally responsive and accessible pre-exam preparation, the trade-offs between traditional and online proctoring, and the role of remediation programs in supporting struggling students. By continuing to refine and improve exit exam administration procedures, higher education institutions can better fulfill their mission of producing competent and confident graduates ready to contribute to society.

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