Effectiveness of Scheduling and Execution Methods in Student Evaluation Systems in Higher Education: A Systematic Literature Review

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Abstract

In higher education settings, evaluating students is not purely an administrative routine but a key driver for maintaining academic standards and supporting improvement in teaching and learning. Despite the main role these systems play, many suffer from recurring weaknesses. Common problems include poorly coordinated scheduling and inconsistent application of evaluation procedures. This review was undertaken to examine such shortcomings, with an emphasis on how scheduling and procedural execution are currently handled. Literature was gathered from four major academic databases, supplemented by target citation searches. The search strategy was guided by the terms "student evaluation," "RACI (Responsible, Accountable, Consulted, and Informed)," and "BPMN (Business Process Modelling Notation)." Reference management was carried out using Mendeley, which also facilitated the removal of duplicate entries. Completely, 188 studies were located, 128 through databases and 60 from citation tracking**.** The screening process proceeded in three phases. Initially, 47 records were removed at the identification stage. Full-text review led to the exclusion of 72 further studies. This left 12 that met the inclusion criteria outlined by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. Of these, nine originated from database searches and three from alternative sources. The evidence collected shows that many student evaluation systems lack detailed execution guidelines and do not employ robust responsibility allocation frameworks. As a result, inefficiencies persist, and assessment outcomes vary from one implementation to another. By drawing on BPMN and RACI methodologies, the present review not only highlights where the systems fall short but also points to practical strategies that could strengthen assessment practices in higher education.

Keywords: BPMN, PRISMA, RACI, Student evaluation, Systematic Review

INTRODUCTION

Within an academic setting, a student evaluation system serves as a structured approach for assessing a learner's skills, behaviour, academic progress, and overall performance. Such a system gathers and interprets data to track how students develop over the course of their studies. In modern education, evaluating performance is more than a formality; it is a vital process for determining the effectiveness of teaching methods, measuring the attainment of learning objectives, and supporting student success. A variety of assessment tools are used for this purpose, including end-of-semester examinations, quizzes, assignments, project work, and ongoing formative evaluations. To provide real-time analytics and feedback, modern assessment systems frequently integrate digital technologies to automate and speed up these processes. (Villegas, 2023) Effective scheduling and execution play a crucial role in student evaluation systems by ensuring that assessments are conducted in a structured, fair, and efficient manner. Poor scheduling can lead to delays, conflicts, and an uneven distribution of workload among students and instructors, affecting both academic performance and the reliability of evaluations (Brown & Jones, 2022). Advances in technology offer innovative solutions for improving scheduling and execution processes; however, several challenges, such as institutional resistance, resource constraints, and technical limitations, hinder seamless implementation (Aditya et al., 2021).

A structured, systematic method of exploring the body of research and literature on a specific subject or research problem is known as a systematic literature review (SLR). A systematic literature review is conducted with the purpose of accumulating, evaluating, and consolidating every available study to guarantee that the review process is as complete and reliable as possible. SLRs, in contrast to

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traditional literature reviews, are characterised by a systematic methodology that with rules on how adherence should be selected studies and how data is acquired and analysed, thus reducing bias and enhancing the reliability of their results. By systematically reviewing research on student evaluation systems, specifically the scheduling and conducting of evaluations... then identifies deficiencies in current practice and considers possible enhancements through technology-driven solutions (Webb et al., 2013). For addressing the latter, it is essential to systematically identify gaps in knowledge and practice. The overview process is geared more towards a selective comprehensive review that involves a flexible but well-defined approach, which in turn can help to reduce bias and guarantee that all relevant data is being fully explored (Angioi & Hiller, 2023). The SLR suggest that the student evaluation systems integrated with formative assessments, continuous feedback, & adaptive learning devices are best to enhance the academic performance and engagement. This paper, therefore, studies the current mechanisms of scheduling and execution in student evaluation systems with a view to making them more effective and efficient in educational establishments.

Exam scheduling affects student results and has consequences on educational achievements as well as their experiences as learners. The student evaluation system crucial factor in how you schedule and manage the process. Scheduling: The process of arranging and allocating resources to bring about a desired result is known as scheduling. Execution: To execute is the way planned activities are accomplished, which enables the fulfilment of the designated results. Execution of this, however, is actually carrying out the plans in order to achieve those outcomes. When these two processes have been streamlined, assessments can pass along without getting stuck in a quagmire or sitting idly by.

Effective scheduling and execution will have to find the right spot between institutional priorities and student needs. Planned scheduling can assist in sharing assessments more balanced throughout the academic year and prevent unnecessary clustering or overload. It is equally essential for the successful execution of the process that stakeholders participate actively, and communication is crucial to enhance transparency in evaluation. Neglecting one of these parts can lead to inefficient resource use, logistical difficulties and dilution of the robustness of the assessment system. Although frameworks such as RACI (Responsible, Accountable, Consulted, Informed) and BPMN (Business Process Modelling Notation) can provide avenues for enhancing the student evaluation process, there is little research on how such models can be successfully implemented in higher education (Borrego, Foster & Froyd, 2014).

Before selecting research papers for inclusion in this study, it was essential to establish clear inclusion and exclusion criteria. Inclusion criteria define the necessary conditions a study must meet to be included, while exclusion criteria specify factors that disqualify a study from consideration. According to Koym (2022), these criteria ensure a systematic and focused review. The selected studies had to meet the following criteria.

The target population of the study and the age of the participants

- Study outcomes or results
- Study design and geographic location
- Condition of interest
- Articles using RACI, BPMN and Student Evaluation

Rather than limiting search results, these criteria were applied to refine the synthesis of evidence, ensuring a more structured and relevant analysis. As suggested by Morgan (2023), defining key terms is crucial for readers unfamiliar with them to fully understand the criteria.

Studies that fail to address the study issues or do not have enough rigorous methodology have been filtered out using the exclusion criteria. Studies are excluded based on the following criteria:

- Publications in languages other than English
- Publications before 2010
- Irrelevant studies
- Emphasis on automation tools
- Study overlap
- Records that are not complete

Through the implementation of accurate and well-defined selection criteria, this systematic review can provide valuable insights into the challenges and solutions related to scheduling and execution evaluation of students as efficiently as possible. (Anderson, 2022).

The accuracy, equality, and efficiency of student evaluations are greatly dependent on how well scheduling and execution procedures work in student evaluation systems. While considerable research has discussed models for student evaluation methods, there is limited understanding of how the procedures that already exist for scheduling and executing align with the expectations of those systems. The relationship between those two areas has received little focused attention, despite the clear effect they have directly on students' evaluations, and indirectly on student evaluation practices (Woltering et al., 2009). This study seeks to fill that gap by using a systematic literature review as a process of analysis to assess the existing literature in an era of practical change to allow for the identification of the important components, approaches, and techniques that provide either success or failure when scheduling and executing evaluation in student evaluation systems. The outcome of this analysis will provide recommendations for practices to improve scheduling and execution, with the aspiration of improving evaluation quality with improved education outcomes.

As a result of this study, there are already indications of success. Despite growing reliance on digital tools and structured means of evaluation, many post-secondary institutions continue to be limited by inefficiencies in planning and scheduling evaluation, which can cause considerable problems in relation to student performance, fairness and resource management practices (Borrego, Foster & Froyd, 2014). An effective framework for scheduling and executing provides and can ensure fairness, reducing stress (Morgan, 2023).

Accordingly, this study set out to address the following research question: How can scheduling and execution processes be optimised, based on existing literature, to enhance the accuracy of student evaluation systems?

The following specific research questions were developed to be addressed during this study.

RQ01: What factors should be considered when identifying relevant literature reviews?

RQ02: What methods are employed for the analysis of existing knowledge?

RQ03: What criteria should be applied to establish the relevance of literature reviews?

RQ04: What methods are applied to evaluate literature reviews regarding scheduling and execution in student evaluation systems?

The primary purpose of the study was to undertake a literature review to "Identify the effectiveness of scheduling and execution methods in student evaluation systems." Other secondary purposes were;

SP01: Identify the factors that should be considered when examining relevant literature reviews.

SP02: Identify the methods used to analyse the existing understanding.

SP03: Identify the criteria that should be considered when examining the literature for review.

SP04: Identify the methods that can be used to assess literature reviews of the scheduling and execution of student evaluation systems.

The significance of this study relates largely to its ability to respond to the significant inadequacies of scheduling and execution of evaluation systems, which is essential to the performance of academic institutes. Student evaluations play a crucial role in evaluating academic achievement, identifying and addressing areas of development, and supporting teaching strategies. The research aimed at these specific areas to produce valuable insights into how institutions can improve their evaluation activities for accurate and valuable outcomes.

In higher education, the performance evaluations of students are complicated and require a systematic scheduling and execution strategy. In addition to identifying the evaluative methods, it is also important to align the evaluations with the learning objectives and evaluative standards. The research is of specific interest to policymakers and administrators responsible for developing evaluative frameworks.

This research will provide a significant contribution to the existing body of literature by synthesising existing research and critically assessing the absence of scheduling and executing policy. This research will expand the knowledge on scheduling and executing processes while supporting future research in the area of scheduling and executing processes as a component of the student evaluation systems, which can be interpreted using models such as PRISMA, RACI and BPMN. By providing both theoretical and practical contributions, this research represents a more cohesive manner to study student evaluation systems issues and their relevance to researchers and practitioners.

However, there are a number of limitations to this research. First, the systematic literature review process is limited to research that has been conducted for previously published for students about student evaluation systems. It may not capture all innovations and simply ignore new processes/directions of educational evaluations, in particular, excluding non-English-speaking countries. Second, consistent with our desire for consistency, we disregarded non-English-speaking countries. Finally, access limitations to several publications' full-text databases to exclude research from the systematic literature review may limit the study. Missing some potentially useful research. These limitations indicate valuable opportunities for further research and areas that require a different perspective in the future.

LITERATURE REVIEW

A systematic literature review (SLR) is necessary for evaluating the performance of scheduling and executing policies in student evaluation systems in higher education. To explore the existing knowledge of scheduling and executing processes in the academic literature of the student evaluation system, we have previously used a systematic literature review process through PRISMA. To demonstrate the novelty of our research on scheduling and executing standards for providing a systematic literature review, we extensively searched previous research studies.

This research fills this gap by undertaking a systematic review using the PRISMA model, allowing a structured and transparent way to determine, search and review relevant studies. Systematic literature reviews (SLRs) are a very helpful means of synthesising evidence or conducting a single comprehensive and impartial analysis of previous research using a systematic review approach, as opposed to traditional literature reviews, which can have accepted selection bias (finding positive results, tendency for publication of high positive impact) (Easterbrook et al., 1991). Unlike a literature review, SLRs look for successful and unsuccessful evaluation methods. The PRISMA framework is a generally accepted methodology for structured literature reviews which allow for gathering, synthesising, archiving, and assessing research output in an accurate way; these assessments limit bias and improve reliability (Petticrew & Roberts, 2006). Within the context of student evaluation systems, using the PRISMA model will provide the basis for identifying gaps happening with administration and execution while determining the overall effect on student performance, institutional effectiveness, and evaluation integrity.

Systematic literature reviews are normally completed with the establishment of inclusion and exclusion criteria, the determination of research questions, multiple searches of broad databases, and the systematic exploration of the substantiality of research to get important information and data to evaluate and explore. SLRs are often used to evaluate information, analyse areas of research not yet applied and draw conclusions of research based on substantial evidence in various research areas (Abelha et al., 2020). SLRs usually utilise various tools such as the PRISMA

framework to ensure accurate and consistent data (Bédard & Ouimet, 2017). SLRs provide a thorough, objective assessment of literature by mapping and analysing studies from several research studies. SLRs have a very substantial place in educational research in identifying patterns, identifying useful research designs, and providing useful evaluations that could heavily influence policy decisions. SLRs can offer value in connecting definitions in theoretical models with actual purposes in meaningfully inviting researchers to look deeper into how inquiries and multiple formats and resources will affect student learning (Petticrew & Roberts, 2006). Even though SLRs provide rigour and detail to qualitative and quantitative studies, their systematic approach sets them apart visibly and credibly in evaluating the efficacy of student evaluation systems (Ressing et al., 2009).

Educational institutions utilise a standardised framework called a student evaluation system to monitor and assess students' learning progress, academic performance, and skills. In addition to evaluating each student's performance individually, the goal is to identify areas where curriculum design and instructional methods should be improved. Modern evaluation methods often involve technology to improve equality, speed procedures, and provide teachers and students' useful feedback. Maintaining academic standards and promoting an environment of continuous progress in education depend heavily on these systems.

The research of Hendry et al. (2007) explored approaches to collecting input from students. This study identifies the methods that post-secondary teachers usually employ for evaluations. All of these studies reached the same conclusion: teachers generally evaluate evaluations positively, but few truly utilise evaluations to enhance their instruction.

The objective of student evaluation is to determine whether the learning outcomes align with the teacher's intended goals. This process often involves making decisions based on assigned grades or marks (Ratnam-Lim & Tan, 2015). Within the framework of this study, a systematic review is defined as an investigation of a specific issue using systematic and transparent methods to identify, select, and evaluate relevant research publications, as well as to analyse their findings (Higgins et al., 2011). Since there is an existing issue related to this topic, it is important to conduct a comprehensive review to explore it in depth. A systematic investigation helps identify key challenges and gaps in the literature (Mengist, Soromessa & Legese, 2019). The methodology used in this analysis makes it possible to identify gaps and choose the course of additional research into the ways in which teachers handle evaluation while focusing on the learning objectives of their students. Trends, gaps, and compared findings could be presented based on SLR and meta-analytic analysis.

Historical Background of SLR in SEP

A contentious issue is the validity of student evaluations of teaching and courses (Hornstein, 2017). Although there are theoretical, conceptual, and empirical reasons supporting the validity of students' evaluations of guidance, these findings have been challenged for a number of reasons (Spooren et al., 2013). Students were especially asked to evaluate the quality of teaching based on the course characteristics (e.g., the course's difficulty or simplicity), the teacher characteristics, and the student characteristics, each of which is unrelated to the quality of instruction and contents of the course (Berk, 2005).

The many approaches used by the researchers in the field contribute to the difficulties around the validity of student evaluations of teaching. Three main methods, the CMT (Classical Measurement Theory), GT (Generalizability Theory), and MFRM (Many Facet Rasch Measurement), are accessible in the measurement literature and have been applied to examine the reliability of student evaluations of teaching (Kim & Wilson, 2009). The measurement literature will have examined extensively which approach gave the most thorough and accurate findings in performance-mediated assessment.

The three-part PRISMA framework includes identification, screening and inclusion (Mengist, Soromessa & Legese, 2019). The first step undertaken by the researchers was developing research questions and exploring the literature on evaluating and creating student learning objectives, skills, and performances. With regards to identification, we applied the process to put more emphasis on the keywords that are selected, and it matters substantially in terms of the impact it provides to the identification of studies. The steps taken greatly improved their approach for identifying the studies by systematically searching the three greatest databases, Google Scholar, SCOPUS, and Web of Science (WoS) altogether as part of the literature review method (Shaffril, Samah & Samsuddin, 2021). The second screening step was to determine that each article that made it through the first screening step indeed met the criteria. The components of exclusions, to collect reliable and quality data, were: books, book series, book chapters, systematic review articles, non-English language, and published after 2015. This review evaluates the mixed research design of the study to create a comprehensive measure of the methods (Hong et al., 2018). Performance-based evaluation is the model of choice for evaluating student learning achievements. The review of the literature shows five studies that directly showcase performance-based evaluation (Rahman et al., 2020). To find trends, gaps and future directions in blended learning (BL), Ashraf et al. (2021) conducted a systematic review of BL using the PRISMA model. The results indicated that BL was first focused on students, and researched mainly in higher institutions.

There were specifically defined inclusion criteria, and specifically original research or review articles that were wholly based on any of the three key research issues on how well students are educated. Studies that were not published in English, not full-text articles, or degraded from the study issues were not included for analysis. In this study, this process eliminated 124 out of 139 papers. There were 15 papers remaining to be included for the in-depth review (Quansah et al., 2024; Constantinou & Wijnen Meijer, 2022). While systematic literature reviews (SRLs) are the most popular as they are typically transparent and systematic, some methods have different approaches, like scoping reviews and meta-narrative reviews, that will vary based on the purpose of the study. For instance, meta-narrative reviews are a useful way to approach complex or interdisciplinary themes. Scoping reviews are typically used

to map literature on a broader question. However, the PRISMA framework is unique in its emphasis on accuracy and consistency, thereby also being suitable for studies requiring depth of data synthesis (Munn et al., 2018). The expectation created by PRISMA is that bias will be reduced and trustworthiness increased, and ensure relevant quality research is included, considering student evaluation systems (Moher, 2019).

The PRISMA model has been applied to various fields, including education; however, its application to informing planning and scheduling processes used to implement procedures in student evaluation systems is still relatively nascent. The majority of existing studies concentrate solely on some dimension of measuring the effectiveness of teaching, the achievement of learning objectives, or assessment methodologies, but they do not consider how these systems can be formally planned, scheduled, and executed in order to increase the educational benefits of the evaluations. For example, previous studies have focused more on the efficacy and content of evaluation tools than on the practical and procedural aspects of their implementation (Mengist, Soromessa & Legese, 2019; Rahman et al., 2020).

In addition, most of the relevant literature has been completed in wealthy countries that have relatively deep educational resources and technological advancement (Ashraf et al., 2021). Although scheduling and execution issues can be made more complex in educational systems with administrative or technical constraints, it is unknown how to address, change or implement these processes specifically for educational systems that have few resources available. Furthermore, the literature has contextual and geographical bias and is not transferable to a broad range of educational systems globally.

Finally, there is a lack of studies that specifically combine systematic literature reviews related to the implementation of evaluation systems effectively. Most existing SLRs focus on border issues such as evaluation validity and reliability without delving into the specifics of scheduling and execution (Hornstein, 2017). Considering studying these operational aspects is essential to creating scalable and effective evaluation frameworks that satisfy various institutional objectives. This study intends to fill these gaps by systematically reviewing available research related to student evaluation systems and elucidating the scheduling and execution processes as important concerns to investigate. This not only broadens the understanding of evaluation research, but it also provides useful suggestions for administrators, educators, and policymakers who are attempting to improve equity and effectiveness of student evaluations.

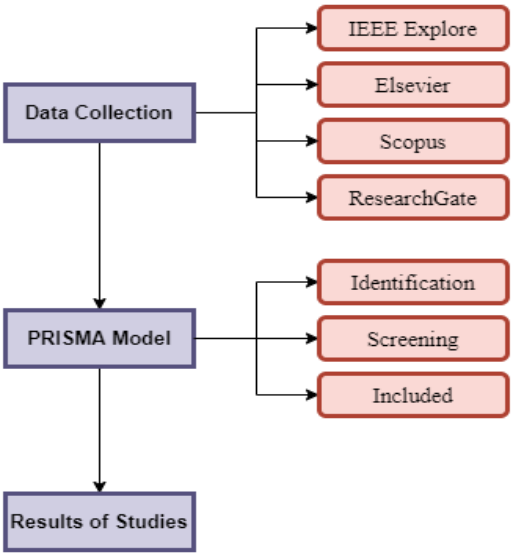
This section should provide a sufficient evaluation of theoretical/empirical literature to identify knowledge gaps.

MATERIALS AND METHODS

This study mainly focused on existing studies related to the scheduling and executing process of students' evaluation systems in a systematic literature review using the PRISMA model.

The following figure illustrates the research approach.

Figure 1: Research approach



Source: Developed by author, 2025

Data Collection

The first step was to gather literature reviews from four research databases, known as IEEE Explore, Elsevier, Scopus and ResearchGate. The previous studies, using with PRISMA model, served as a good reference for this investigation. The study states it uses data collection of research articles from the databases and the citation searching method, which includes keywords "Student Evaluation", "RACI", and "BPMN". In total, there were 188 research articles collected, with 128 from databases and 60 from citation searches.

As a search strategy to help find more relevant research articles, Boolean operators were used to provide better accuracy and relevance of the studies found. To provide more detail to the search result, terms combined with the keywords "Student Evaluation," "RACI," and "BPMN." In order to ensure papers, focus on both the concept of evaluation systems and the frameworks central to the research. For example, the Boolean "Student Evaluation" AND ("RACI" OR "BPMN"). This was a clearly directed approach of using core search terms and was able to easily find significant research articles that were relatively related to the process of scheduling and execution of evaluations within the evaluation systems of students.

Table 1: Description of search strategy

Database	Keywords	Boolean expression	Filters applied	Result retrieved
ResearchGate	Student Evaluation" AND ("RACI" OR "BPMN")	AND, OR	Full Text, Published after 2010	58
IEEE Explorer	Student Evaluation System" AND "RACI" AND "BPMN"	AND	Full Text, English Language	40
Scopus	Student Evaluation"	AND, OR	Published 2015- 2020	18

	OR "Student Assessment" AND ("RACI" AND "BPMN")			
Elsevier	Student Evaluation" AND "RACI" AND "BPMN"	AND	English Language, Published after 2010	24
Other	Student Evaluation" AND "RACI" AND "BPMN"	AND	Full Text, Published 2015- 2020	62

Source: Developed by author, 2025

The study search strategy to find relevant articles was constructed systematically to ensure complete coverage of the relevant data. To find the articles related to the study's objectives, the study used Boolean operators and a few keywords. The particulars of the search strategy, including the databases, keywords, Boolean operators, and any other filters used, were all included in the table above. There are also duplicate records included in this result retrieved records.

A sound approach for data management was observed to assist in organising and clarifying the data gathered. The Mendeley tool was the data management reference for locating and managing references (full-text papers and citation information) throughout the project. The Mendeley duplicate detection function was also utilised at the end of the project to ensure that a unique dataset was maintained, and this process was used to eliminate any duplicate records. The thorough data management approach was important in maintaining the accuracy and integrity of the systematic literature review in student evaluation systems, which comprised the systematic literature review using a rigorous search strategy, a wide range of databases, and reference management that was effective. During the Mendeley reference management process, 14 duplicate records were detected. (Mendeley - Reference Management Software, n.d.).

PRISMA Model

The PRISMA model has developed a visual representation of the systematic review process and reflects that the two main elements in this systematic review process are databases and other means. The PRISMA model illustrates three steps of the review process through a flow chart with the following categories: identification (description of records removed as duplicates), screening (records excluded, reports not retrieved, as well as reports excluded and why), and lastly, inclusion (records not retrieved, reports excluded). The identification step contains three items with respect to databases and includes the records removed in duplicates, records (Sent to Screening Health via automation tools) marked as ineligible, and records removed for other reasons. There are three steps in the screening process: records excluded, reports not retrieved, and reports excluded with reasons. The other means part of the process includes two steps: reports not retrieved and reports excluded. In the last process, we are able to retrieve the final records of the reports (Moher et al., 2009).

Identification Process: In a systematic literature review, the identification step involves searching for relevant studies using a predetermined set of criteria. To ensure complete coverage of the subject of scheduling and execution techniques in evaluation systems, keywords were carefully selected for this study. The terms "Student Evaluation," "RACI," and "BPMN," which are essential to the review's scope, were selected. The more general term "Student Evaluation" refers to a variety of techniques used to evaluate students' academic achievement. Frameworks such as "RACI" (Responsible, Accountable, Consulted, Informed) and "BPMN" (Business Process Model and Notation) assist in organising the planning and scheduling procedure in evaluation systems. The extensive scope of study in educational evaluation provided an important challenge during the identification step, resulting in a huge number of irrelevant records. This required thorough screening research according to abstracts and titles. Finding appropriate databases, such as IEEE Explore, Elsevier, Scopus, and ResearchGate, helps in focusing the search on reliable, peer-reviewed sources (Colares et al., 2020).

Screening Process: A two-stage screening process was conducted. Initially, articles were screened based on the titles and abstracts to eliminate irrelevant studies. The second phase involved full-text reviews, applying the inclusion/ exclusion criteria to refine the final selection. Ensuring that only outstanding relevant research advances on to the inclusion stage requires the screening process to eliminate irrelevant studies. In order to increase efficiency, however, manual verification is still necessary to ensure accuracy. Based on specific inclusion criteria, such as relevance to the research topic and consistency with the study's methodology and target population, studies are then excluded. To reduce the study pool and ensure focus on the scheduling and execution of evaluation systems, both automatic devices and manual reviews are used (Moher et al., 2015).

Inclusion and Exclusion Criteria

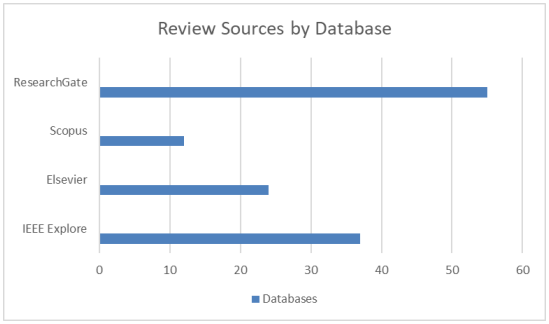
Strict inclusion and exclusion criteria were applied to ensure the reliability of selected studies. The inclusion criteria consisted of peer-reviewed journal articles, conference proceedings, and systematic review papers directly related to student evaluation system scheduling and execution processes. Studies covering various geographic regions were included to ensure global applicability. However, non-English language studies, book chapters, review articles without empirical data and publications before 2010 were excluded. Only studies that provided original research findings or systematic reviews were considered.

A standardised filtering approach was maintained across all databases. Studies were filtered based on publication year (2010-2024), full-text availability, peer-reviewed status, and relevance to student evaluation scheduling and execution.

RESULTS AND DISCUSSION

Following the application of the PRISMA model's three stages of identifying the eligible studies for this systematic literature review's analysis, the total number of research papers was 188, with 128 sourced from databases and 60 obtained through citation searches.

Figure 2: Review source by database



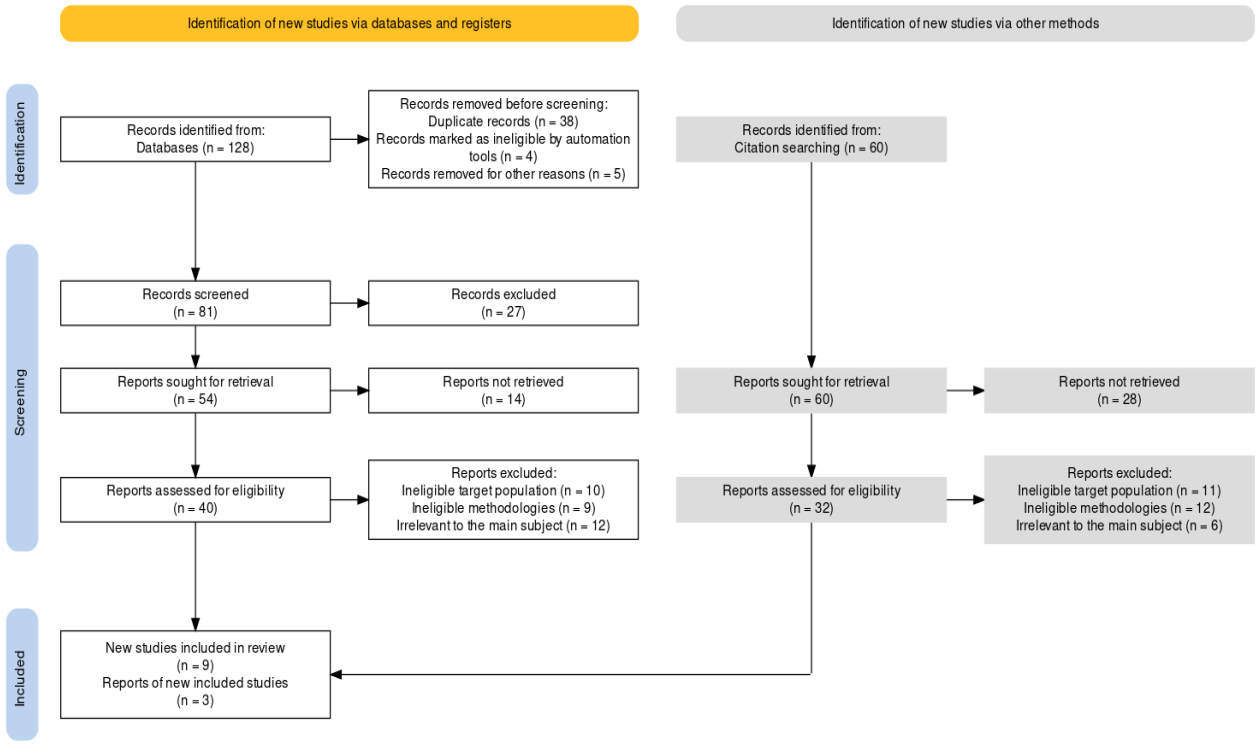
Source: Developed by author, 2025

Figure 2 describes the distribution of research review sources collected from databases. The number of sources is described using the horizontal axis, while the databases are listed on the vertical axis. Among these four different databases, the ResearchGate database gathered the highest number of review papers. It's nearly 50 sources. IEEE Explore collected more than 30 records. It ranks second. With over 20 sources, Elsevier showed its multidisciplinary coverage, and with fewer than 10 sources, Scopus provided the fewest sources, suggesting a very minor contribution to this study.

According to the results, in the first step, the identification process removed 47 records. These removed records are categorised as follows: 38 records were removed during the duplicate record step, 4 records were marked as ineligible by the automation tool, and 5 records were removed for other reasons. The screening process removed 72 records collected through the databases. Specifically, 27 records were excluded during the record exclusion step, 14 records were not retrieved, and after reading the full papers, additional records were excluded. The reasons for exclusion were as follows: ineligible target population (10), ineligible methodologies (9), and irrelevance to the main subject (12). In terms of other methods, the identification process included 60 records, and the screening process removed 57 records. Of these, 28 records were removed in the reports not retrieved step, and 29 records were excluded for the same reasons as in the databases. After completing all processes, 9 records from the databases and 3 records from the other methods were retained. In total, 12 final papers were included in the study using the PRISMA model.

The result of reviews using the PRISMA model is shown in Figure 3.

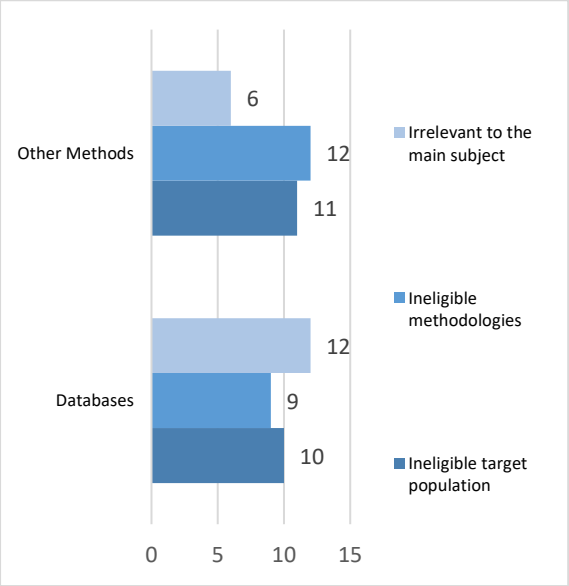
Figure 3: Results of the PRISMA model



Source: Developed by author, 2025

The screening process plays a major role in the PRISMA model. The summary of the screening process can be seen as a whole in Figure 4.

Figure 4: Screening process



Source: Developed by author, 2025

The summary of the PRISMA model's final results, including all removed records with steps, is recorded in Table 2.

Table 2: Description of exclusion criteria and number of removed records

Method	Process	Step	Removed records
Database	Identification	Duplicate records	38
		Ineligible by automation tools	4
		Other reasons	5
	Screening	Records excluded	27
		Reports not retrieved	14
		Ineligible target population	10
		Ineligible methodologies	9
		Irrelevant to the main subject	12
Other Methods	Screening	Reports not retrieved	28
		Ineligible target population	11
		Ineligible methodologies	12
		Irrelevant to the main subject	6

Source: Developed by author, 2025

Following the identification and Screening phases of the PRISMA model for both database and other methods, the table lists the exclusion criteria used throughout the systematic literature review process. To ensure the quality, relevance, and alignment of the studies with the study aims, the exclusion criteria were essential in filtering the dataset. Duplicate records were removed during the identification step to avoid duplication, and then automated programs marked certain entries as ineligible according to predetermined criteria. Other records were removed for a variety of reasons, including data that was either irrelevant or insufficient. Through the removal of clearly non-contributory aspects, this step aimed to simplify the initial dataset.

A more comprehensive evaluation was conducted during the screening step, and records that did not satisfy eligibility requirements were removed. Studies that focused on populations beyond the scope of the study, used processes considered unsuitable for the objectives of the study, or were not relevant to the major subject were among the primary reasons for removal. Additionally, some records could not be collected because of logistical issues or limited access. After reading whole research papers in the screening's excluded step, we checked the reports excluded and found 29 records in other methods and 31 records in the databases with the above-mentioned reasons.

Similar exclusion criteria were used for papers found using other methods of such citation searches, highlighting the significance of thorough screening across all sources. The review's validity and reliability were enhanced by the methodical removal of papers that were considered ineligible, which ensured that only excellent, relevant research was included in the final analysis.

Given the rapid advancements in digital education, this study considered research published from 2010 onwards, ensuring relevance to modern education practices. However, to better capture digital transformation trends in student evaluation systems, future studies should include criteria that explicitly focus on digital evaluation tools, AI-driven evaluation methods, and online student feedback systems. This will help align the review with the evolving landscape of educational technology.

Table 3 concisely presents the 12 final studies reviewed, categorising them based on their contribution to BPMN, RACI, and Student Evaluation frameworks

Table 3: Results of systematic literature review

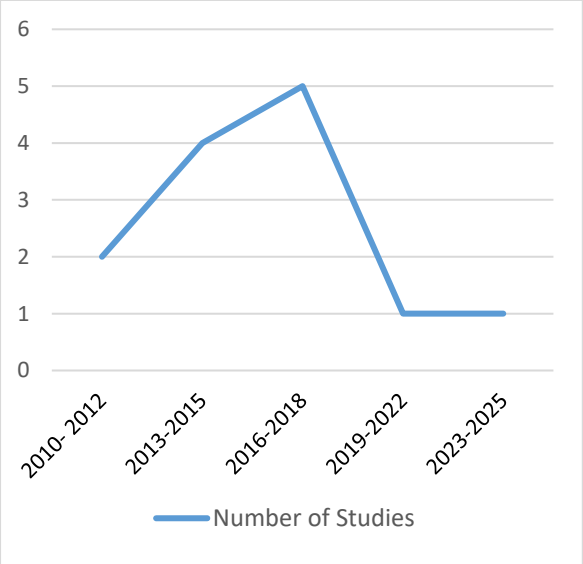
Author(s)	Year	Title	Keywords
(Corradini at el., 2017)	2017	A Guidelines Framework for Understandable BPMN Models	BPMN
(Cabanillas et al., 2017)	2017	A template-based approach for responsibility management in executable business processes	RACI, BPMN
(Cabanillas et al., 2013)	2013	Automated Resource Assignment in BPMN Models Using RACI Matrices	RACI, BPMN
(Chinosi & Trombetta, 2012)	2012	BPMN: An introduction to the standard	BPMN

(Pavel Naplava & Pergl, 2015)	2015	Empirical Study of Applying the DEMO Method for Improving BPMN Process Models in Academic Environment.	BPMN
(Blair & Valdez Noel, 2014)	2014	Improving higher education practice through student evaluation systems: is the student voice being heard?	Student Evaluation
(Cabanillas Macías et al., 2011)	2011	Mixing RASCI Matrices and BPMN Together for Responsibility Management	RACI, BPMN
(Pańkowska, 2018)	2018	Non-Formal Education Event Governance Strategies	RACI, BPMN
(Darwin, 2016)	2016	Student Evaluation in Higher Education	Student Evaluation
(Schermerhorn, 2017)	2017	An Assessment Framework to Govern and Manage Research Data within Research Institutions	RACI, BPMN
(Tucker, 2013)	2013	Student evaluation to improve the student learning experience: an Australian university case study.	Student Evaluation
(Giacomo Garaccione et al., 2024)	2024	Gamification of a BPMN Modeling Course: An Analysis of Effectiveness and Student Perception	BPMN Student Evaluation

Source: Developed by author, 2025

An overview of the research papers that were included in this systematic review is shown in the table, which also highlights significant contributions to the fields of student evaluation, RACI (Responsible, Accountable, Consulted, and Informed) matrices, and BPMN (Business Process Model and Notation). The studies, which cover the years 2011-2024, explain how these frameworks have changed over time. The variety of research in various fields is reflected in this complication, which offers insightful information and suggests possible paths for further study. The review identified gaps in the current state of knowledge and provided avenues for further study to improve the effectiveness and efficacy of student evaluation procedures.

Figure 5: Research distribution by year



Source: Developed by author, 2025

The research distribution by year is displayed in the graph, with a focus on effectiveness related to student evaluation, BPMN, and RACI. Three studies were conducted between 2010 and 2012, with the main goal of exposing BPMN standards and their first usage. Between 2013 and 2015, four papers examined the integration of the RACI and BPMN frameworks. However, research effort peaked between 2016 and 2018, with five studies providing an important contribution to the use of RACI and BPMN in responsibility management and business process modelling. During this period, there was also a greater focus on evaluating student feedback systems and demonstrating collaborative methods.

Only one paper was published between 2019 and 2022, reflecting a noticeable decrease in research activity after the earlier peak. However, this lower number may be attributed to limitations in the database search rather than a true decline in interest or research contributions. A more comprehensive search across additional or more recent databases may yield more relevant studies. This trend of limited publications continued through 2023-2025, which suggests a need for further exploration of this area within the available data sources.

The research gaps identified in the study on RACI, BPMN, and student evaluation procedures are as follows. First, there is a lack of standard structures for evaluation, which can be addressed by providing an integrated and flexible evaluation framework that combines the RACI and BPMN approaches, ensuring process clarity. Another gap is the limited use of BPMN and RACI in education, which could be remedied by testing the efficacy of incorporating these frameworks into academic evaluation procedures through empirical research. Additionally, student participation in evaluation design has been minimal. To address this, techniques for participatory design should be incorporated, allowing students to actively contribute to the development of evaluation criteria. The inconsistent application of RACI in educational settings is another issue, and this can be improved by creating uniform rules for using the RACI framework across different academic contexts. Lastly, the assessment process is poorly represented, and this could be improved by visualising the evaluation process using BPMN modelling approaches, making it easier for all stakeholders to understand.

One limitation of this study is the potential geographic bias in the dataset, as the majority of included records originate from specific regions. While this offers in-depth insights into local implementations of student evaluation systems, it limits the generalizability of the findings. To enhance the study's comprehensiveness, future research should expand the search strategy to include additional global databases, such as Springer, Web of Science, and ERIC, ensuring a more balanced representation of studies across diverse educational contexts.

CONCLUSION

This study critically examined the existing student evaluation systems by systematically reviewing relevant literature. The aim was to identify gaps and propose improvements for higher education evaluation practices. Using the PRISMA model, a total of 188 studies were initially identified, with 12 ultimately selected for in-depth analysis following rigorous screening. These studies revealed several key gaps in the current evaluation systems, including the absence of standardised frameworks and limited student involvement in the evaluation process.

The findings suggest that integrating the RACI and BPMN approaches could establish a more structured and transparent framework for student evaluations. Such a combined approach would enhance accountability, clarify responsibilities, and improve process visualisation, ultimately leading to more effective and student-centred evaluation practices.

In conclusion, this research advances the understanding of student evaluation systems by providing a comprehensive framework for improvement. By addressing the identified gaps, it offers actionable insights for developing more equitable, efficient, and relevant evaluation processes that better serve both students and educational institutions.

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