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Governance of high school students' learning assessment data in digital environments theoretical foundations and a conceptual framework

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***Abstract*---**Digital assessment generates increasing amounts of information about students' learning, creating a need for schools to consider not only how assessment data are collected but also how they are organized, interpreted, accessed, protected, and used. This study examines the theoretical foundations of assessment data governance and develops a conceptual framework for high school education in digital environments. A qualitative literature review was conducted using 21 publications related to formative assessment, digital assessment, assessment literacy, feedback, and assessment data use. The literature was analyzed through thematic coding and comparison. The findings identify six principles of assessment data governance: accuracy, validity, accessibility, security and privacy, transparency, and accountability. Based on these principles, a framework comprising five interconnected components is proposed: data generation and collection, data storage and organization, data analysis and interpretation, data use and feedback, and data security, accountability, and quality assurance. The study also clarifies the roles of school leaders, teachers, students, and technical support personnel in the governance process. The framework highlights that assessment data governance is not merely a technical issue but an educational and managerial process in which professional judgment remains central. The study provides a theoretical basis for further empirical research and for developing assessment data governance practices in high schools in Hanoi and Vietnam.

***Keywords*---**assessment data governance, digital assessment, formative assessment, high school, digital environment, Vietnam.

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1. Introduction

Digital transformation is changing the ways in which student learning outcomes are assessed and used in schools. Digital platforms allow teachers to collect assessment evidence more frequently, provide feedback more quickly, and monitor students' learning progress over time. Studies have shown that digital technologies can support formative assessment and strengthen the connection between assessment, feedback, and learning (Dalby & Swan, 2019; Casanova et al., 2021; Cooper et al., 2022). In this context, assessment increasingly generates different forms of digital data that can be used not only to record learning outcomes but also to support teaching and learning decisions.

The educational value of these data, however, depends on how they are interpreted and used. Formative assessment emphasizes the use of evidence to identify students' current learning and determine appropriate subsequent actions (Sadler, 1989; Black & Wiliam, 2009). Similarly, Black and Wiliam (2018) argue that assessment needs to be closely connected with classroom pedagogy. Digital technologies may increase the amount and availability of assessment information, but they do not automatically lead to better educational decisions. Teachers still need appropriate assessment literacy and professional judgment to interpret evidence and use it meaningfully (Stiggins, 1991; DeLuca et al., 2019; Schildkamp et al., 2020).

The expansion of digital assessment also raises questions about how assessment data are organized, accessed, protected, and used within schools. Data may be generated through different subjects, assessment activities, teachers, and digital platforms. Without common procedures, such information may become fragmented and difficult to use consistently. Moreover, students are increasingly involved in accessing assessment results, engaging with feedback, and monitoring their own progress (Casanova et al., 2021; Vattøy et al., 2022). These developments extend assessment beyond individual classroom practices and create a need to consider assessment data at the school management level.

This issue is also relevant to high school education in Vietnam. Research has examined teachers' ICT competence and the use of technology in assessment (Hai et al., 2016), while studies in mathematics education have addressed teachers' assessment of students' learning and competence (Hai & Tinh, 2016; Tinh, 2015). More recently, Phuong Thao and Thi Kim Nhung (2025) found that online formative assessment could support students' self regulated learning in a secondary school in Hanoi. These studies indicate increasing attention to technology supported assessment in the Vietnamese context. However, the available literature in the selected sources provides less attention to how the data generated through digital assessment should be systematically organized, interpreted, accessed, protected, and used at the school level.

Against this background, assessment data governance provides a useful perspective for connecting assessment practices with school management in digital environments. Rather than treating assessment data simply as digital records, this perspective considers the principles, processes, and responsibilities involved throughout the use of assessment information. Accordingly, this study

examines the theoretical foundations of assessment data governance and proposes a conceptual framework for high school education. It addresses three questions: (1) What principles are relevant to the governance of learning assessment data in digital environments? (2) What components should constitute a framework for governing high school students' learning assessment data? and (3) What roles should school leaders, teachers, students, and technical support personnel assume within this framework?

2. Research Methodology

This study employed a qualitative literature review to examine the theoretical foundations of assessment data governance and develop a conceptual framework for high school education. Relevant studies were identified through Web of Science, Scopus, and Google Scholar using combinations of keywords such as "digital assessment," "assessment data," "formative assessment," "assessment literacy," "digital feedback," "data use," and "secondary education." Studies were selected based on their relevance to digital assessment, the generation and use of assessment data, feedback, teacher assessment competence, and assessment practices in digital environments. Foundational studies were also retained when they provided important concepts for understanding the interpretation and educational use of assessment evidence. Based on these criteria, 21 publications were included in the review.

The selected studies were analyzed through thematic coding and comparison. Initial coding focused on four areas: the characteristics of assessment data in digital environments, principles related to the management and use of assessment data, stages through which assessment data are generated and used, and the responsibilities of relevant actors. Similar codes were grouped into broader categories and compared across the reviewed studies. This process was used to identify recurring principles and components and to organize them into a conceptual framework for assessment data governance in high schools.

3. Theoretical Foundations of Assessment Data Governance

3.1. Assessment Data in Digital Environments

Assessment data refer to information generated through activities designed to determine students' learning progress and outcomes. Traditionally, such information has been represented mainly by test scores, grades, teacher judgments, and written feedback. In digital environments, assessment data are more diverse and can be generated throughout the learning process. They may include responses to online tasks, assessment results, feedback records, evidence of progress, and information generated through students' participation in digital assessment activities (Dalby & Swan, 2019; Cooper et al., 2022).

The value of assessment data depends not only on their availability but also on how they are interpreted and used. From a formative assessment perspective, evidence of learning should help teachers identify students' current performance and determine appropriate actions to support further learning (Sadler, 1989; Black & Wiliam, 2009). Assessment data therefore serve both as evidence of

learning outcomes and as information for adjusting instruction and providing feedback.

Digital technologies can make such evidence available more frequently and rapidly. They also provide students with greater opportunities to access results, engage with feedback, and monitor their own learning (Casanova et al., 2021; Vattøy et al., 2022). However, greater availability of data does not necessarily result in better assessment. Teachers need assessment literacy to judge the quality of evidence, interpret it in relation to learning objectives, and use it appropriately (Stiggins, 1991; DeLuca et al., 2019).

3.2. From Digital Assessment to Assessment Data Governance

Digital assessment and assessment data governance are related but different concepts. Digital assessment refers to the use of digital technologies to support activities such as delivering assessment tasks, collecting responses, providing feedback, and monitoring learning progress. Assessment data governance has a broader focus on how the resulting data are organized, accessed, interpreted, protected, and used within the school.

This distinction becomes important as assessment data are generated across different subjects, teachers, activities, and digital platforms. Although technology can facilitate the collection and processing of information, educational decisions still require professional interpretation. Research on formative assessment emphasizes that evidence becomes meaningful when it informs subsequent teaching and learning (Black & Wiliam, 2018; Schildkamp et al., 2020). Thus, the management of assessment data needs to remain closely connected to educational purposes.

At the school level, this requires common principles and responsibilities concerning the use of assessment information. Teachers have a central role in generating and interpreting data, while students increasingly use assessment information to understand and regulate their learning. School management is also important in establishing conditions that enable consistent assessment practices and appropriate use of digital systems. Assessment data governance can therefore be understood in this study as the principles, processes, and responsibilities through which assessment data are organized, accessed, interpreted, protected, and used to support teaching and learning.

3.3. Principles of Assessment Data Governance

The literature reviewed suggests that the governance of assessment data should maintain the educational quality of assessment while addressing the requirements created by digital environments. Based on the thematic analysis, six related principles were identified: accuracy, validity, accessibility, security and privacy, transparency, and accountability.

Accuracy concerns whether recorded assessment information correctly represents the evidence generated through assessment activities. Errors in recording, processing, or organizing data may affect subsequent interpretations and decisions. Teachers therefore need to exercise professional judgment when checking and interpreting assessment information (DeLuca et al., 2019).

Validity refers to the relationship between assessment evidence and its intended educational purpose. The availability of digital data does not mean that all information is equally useful. Assessment data should provide appropriate evidence of the learning outcomes or progress they are intended to represent (Black & Wiliam, 2018; Nieminen et al., 2023).

Accessibility means that relevant assessment information should be available to appropriate users when it is needed. Teachers require timely information to make instructional decisions, while students need access to results and feedback to understand their learning and determine subsequent actions (Hattie & Timperley, 2007; Jensen et al., 2021).

Security and privacy concern the appropriate protection of students' assessment information in digital environments. Access should correspond to users' responsibilities, particularly when assessment information is stored or exchanged through digital systems.
Transparency requires that relevant participants understand the purposes for which assessment information is collected and used. Students should understand assessment expectations and feedback, while teachers need clear procedures for interpreting and using assessment evidence. Shared understanding can support more meaningful engagement with assessment (Jónsson et al., 2018).

Accountability concerns the responsibilities associated with the generation, interpretation, protection, and use of assessment data. Because digital assessment involves teachers, students, school managers, and technical support, responsibilities need to be clearly defined rather than left to individual practice.
Together, these principles provide the theoretical basis for considering assessment data governance as both an educational and managerial process. They also provide the foundation for the conceptual framework developed in the following section.

4. Conceptual Framework for Assessment Data Governance

Based on the theoretical foundations and thematic analysis of the reviewed literature, assessment data governance in high schools can be understood as a continuous process through which assessment information is generated, organized, interpreted, used, and protected. The proposed framework consists of five interconnected components: (1) data generation and collection, (2) data storage and organization, (3) data analysis and interpretation, (4) data use and feedback, and (5) data security, accountability, and quality assurance. These components are not independent stages. Information generated in one part of the process influences subsequent activities, while feedback and quality assurance may lead to adjustments in earlier stages.

Table 1. Conceptual Framework for Assessment Data Governance in High Schools

Component	Main focus	Key activities	Expected contribution
Data generation and collection	Producing relevant	Designing assessment activities; collecting	Provides appropriate

Component	Main focus	Key activities	Expected contribution
	assessment evidence	student responses, results, and feedback information; linking evidence to learning objectives	evidence of students' learning progress and outcomes
Data storage and organization	Maintaining assessment information in usable forms	Recording, classifying, updating, and organizing assessment data across subjects and assessment activities	Supports continuity, accessibility, and consistency of assessment information
Data analysis and interpretation	Transforming data into educationally meaningful information	Examining performance patterns; comparing evidence with learning objectives; identifying progress and learning difficulties	Supports professional judgment and instructional decision making
Data use and feedback	Applying assessment information to teaching and learning	Providing feedback; adjusting instruction; supporting student self regulation; monitoring subsequent progress	Connects assessment evidence with actions for improving learning
Data security, accountability, and quality assurance	Maintaining responsible and reliable use of assessment data	Controlling access; clarifying responsibilities; checking data quality; reviewing procedures for data use and protection	Promotes responsible, consistent, and trustworthy assessment data practices

Data Generation and Collection

The framework begins with the generation and collection of assessment evidence. Assessment data may originate from formal tests, classroom tasks, online activities, teacher observations, and feedback processes. Digital environments expand the range and frequency of such evidence, allowing information to be collected at different points in the learning process (Dalby & Swan, 2019; Cooper et al., 2022). However, collecting more data does not necessarily improve assessment. The evidence collected should remain aligned with learning objectives and the intended purposes of assessment.

This component is closely associated with validity and accuracy. Assessment activities need to generate evidence that represents what students are expected to learn. From a formative perspective, evidence is particularly useful when it enables teachers to recognize differences between students' current learning and intended learning goals (Sadler, 1989; Black & Wiliam, 2009). Schools should therefore focus on the relevance and quality of assessment evidence rather than simply increasing the volume of digital data.

Data Storage and Organization
Once assessment evidence has been generated, it needs to be recorded and organized so that it can be retrieved and used when necessary. In high schools, assessment information may come from different subjects, teachers, assessment activities, and digital platforms. Without appropriate organization, data can remain fragmented and their value for monitoring learning over time may be reduced.

Data organization should enable teachers and other authorized users to identify relevant information without separating the data from its educational context. Assessment scores, for example, are more meaningful when they can be considered together with learning objectives, assessment tasks, and feedback. Accessibility therefore needs to be balanced with appropriate responsibilities for access and use.

Data Analysis and Interpretation
Assessment data become educationally useful through interpretation. Teachers need to examine evidence in relation to learning objectives, previous performance, and the context in which the assessment was conducted. This process requires more than technical data processing because assessment evidence does not explain by itself why students performed in a particular way or what should be done next.

Assessment literacy is therefore central to this component. Stiggins (1991) highlighted the importance of teachers' ability to understand and use assessment appropriately, while subsequent studies have emphasized professional knowledge and competence as important conditions for effective formative assessment (DeLuca et al., 2019; Schildkamp et al., 2020). Digital tools may assist teachers in identifying patterns, but professional judgment remains necessary when translating these patterns into educational decisions.

Data Use and Feedback
The value of assessment data is realized when the information contributes to teaching and learning. Teachers can use assessment evidence to modify instructional strategies, provide additional support, differentiate learning activities, or reconsider learning objectives. Feedback is particularly important because it connects information about current performance with actions that students can take to improve their learning (Hattie & Timperley, 2007).

Digital environments can facilitate more timely feedback and create opportunities for students to engage actively with assessment information. Jensen et al. (2021) show that feedback in online environments needs to be understood as more than the transmission of information, while Casanova et al. (2021) emphasize greater learner agency in digital assessment and feedback. Evidence from upper secondary education also suggests that students' engagement with assessment and feedback is important in digital contexts (Vattøy et al., 2022). Thus, students should be viewed as users of assessment data rather than merely as subjects from whom data are collected.

Data Security, Accountability, and Quality Assurance
The final component operates across the entire framework. Digital assessment data need to remain reliable and be used for legitimate educational purposes. Schools therefore need procedures for checking the accuracy and completeness of assessment information, determining who may access particular types of data, and clarifying responsibilities for their use.

Quality assurance also involves reviewing whether assessment data continue to serve their intended purposes. Problems identified during interpretation or use may reveal weaknesses in data collection, organization, or assessment design. For this reason, quality assurance should not be treated as an activity conducted only after assessment has been completed. It should provide feedback to the other components and support continuous improvement in assessment practices.

The five components form a connected cycle rather than a linear sequence. Data are generated and organized so that they can be interpreted and used, while experience from their use can inform subsequent assessment design and data collection. Security, accountability, and quality assurance operate throughout this cycle. The framework therefore links the technical handling of assessment information with its educational purposes and provides a basis for defining the responsibilities of different actors within the school.

5. Roles and Responsibilities in Assessment Data Governance

Effective assessment data governance depends not only on procedures and digital systems but also on the people who generate, interpret, use, and manage assessment information. In high schools, these responsibilities are distributed among school leaders, teachers, students, and technical support personnel. Their roles differ, but they are closely connected throughout the assessment data process. Clear responsibilities can reduce fragmented practices and help ensure that assessment information remains useful for educational purposes.

Table 2. Roles and Responsibilities in Assessment Data Governance

Actor	Main role	Key responsibilities
School leaders	Establishing governance conditions	Develop school-level procedures; define access and responsibilities; coordinate assessment practices; support professional development; monitor data quality and appropriate use
Teachers	Generating, interpreting, and using assessment data	Design assessment activities; collect and verify evidence; interpret student performance; provide feedback; use data to adjust teaching
Students	Engaging with and using their assessment information	Access results and feedback; interpret information about their learning; respond to feedback; monitor progress; participate responsibly in digital assessment
Technical	Supporting digital	Maintain digital assessment systems;

Actor	Main role	Key responsibilities
support personnel	infrastructure and data management	support data storage and access; manage technical permissions; assist users; contribute to data protection and system reliability

School Leaders
School leaders have an important coordinating role because assessment data are generated across different subjects, teachers, and digital environments. Their responsibility is not to replace teachers' professional judgment but to establish conditions under which assessment information can be managed consistently across the school. This includes developing procedures for recording and accessing data, clarifying responsibilities, and ensuring that assessment practices remain aligned with educational objectives.

School leaders also need to support teachers' capacity to interpret and use assessment information. Research has consistently shown that successful formative assessment depends on teachers' knowledge, beliefs, and professional learning (Andersson & Palm, 2018; DeLuca et al., 2019; Schildkamp et al., 2020). Governance arrangements should therefore include professional development rather than focus only on technological systems or administrative requirements.

Teachers
Teachers occupy a central position in the proposed framework because they are directly involved in generating, interpreting, and using assessment evidence. They design assessment activities, determine what evidence should be collected, interpret students' performance, provide feedback, and decide how assessment information should influence subsequent instruction. Their assessment literacy therefore affects the quality of data throughout the governance process (Stiggins, 1991).

Digital tools can support these activities by making assessment information more readily available, but they do not remove the need for professional judgment. Teachers need to consider whether the available evidence adequately represents intended learning and whether conclusions drawn from the data are educationally justified (Black & Wiliam, 2018). They also have responsibilities for maintaining accurate records and using student information only for appropriate educational purposes.

Students
Students should not be treated solely as sources of assessment data. They are also users of information about their own learning. Feedback becomes more valuable when students understand it, engage with it, and use it to determine subsequent learning actions. Research has emphasized the importance of students' active participation in feedback and assessment processes (Casanova et al., 2021; Jensen et al., 2021; Vattøy et al., 2022).

Within the proposed framework, students should have appropriate access to their assessment results and feedback and should be supported in interpreting this information. They also have responsibilities when participating in digital

assessment, including using assessment systems appropriately and engaging responsibly with the information made available to them. This role connects assessment data governance with the development of learner agency and self regulated learning.

Technical Support Personnel
Technical support personnel contribute to the operation and reliability of digital assessment environments. Their responsibilities may include maintaining digital platforms, supporting data storage and retrieval, managing technical access permissions, resolving system problems, and assisting teachers and school leaders in the use of digital systems.

Their role, however, should remain distinct from educational interpretation. Technical personnel can support the availability, organization, and protection of assessment information, but decisions about what the data mean for students' learning remain primarily educational responsibilities. This distinction helps prevent technical functionality from being treated as a substitute for assessment expertise.

Shared Responsibility and Coordination
Although the roles described above are distinct, assessment data governance requires coordination among them. School leaders establish institutional conditions, teachers exercise assessment judgment, students engage with information about their learning, and technical personnel maintain the digital environment in which data are stored and accessed. Weakness in one area can affect the effectiveness of the entire process.

Responsibility should therefore be understood as distributed rather than isolated. For example, reliable assessment data require appropriate assessment design by teachers, suitable digital systems, clear school procedures, and responsible participation by students. Similarly, accessibility needs to be considered together with appropriate authorization and educational purpose. The proposed framework consequently places coordination among actors alongside the five components of assessment data governance rather than treating governance as the responsibility of a single individual or department.

6. Implications for High School Management in Digital Environments

The framework developed in this study has several implications for the management of assessment in high schools. One important issue is the way schools approach digital assessment data. In practice, the introduction of digital platforms can easily lead to an emphasis on collecting and storing information. Yet the availability of data is only useful when schools have a clear understanding of why particular information is collected and how it contributes to teaching and learning. For school leaders, the concern is therefore not simply whether assessment has been digitized, but whether the resulting information can be used meaningfully by teachers and students.

Schools need some degree of consistency in the way assessment information is recorded and organized. This does not require all subjects to use identical

assessment practices. Different subjects may require different forms of evidence and professional judgment. What is needed is a common understanding of basic issues such as how assessment results are recorded, who can access them, how long relevant information is retained, and how errors are corrected. Such arrangements become increasingly important when several digital platforms are used within the same school.

Teacher capacity is another practical concern. The literature reviewed in this study suggests that effective formative assessment depends substantially on teachers' assessment knowledge and their ability to interpret evidence (Andersson & Palm, 2018; DeLuca et al., 2019; Schildkamp et al., 2020). Professional development in a digital environment should consequently go beyond training teachers to operate software. Teachers also need opportunities to examine how digital evidence is interpreted, how different sources of assessment information can be combined, and when the available data are insufficient to support a particular judgment.

The framework also suggests a need to reconsider students' position in school assessment systems. Students increasingly receive scores, comments, and other forms of feedback through digital platforms. Giving students access to such information is useful only when they are able to understand and act on it. Studies of digital assessment and feedback have pointed to the importance of learner engagement and agency in this process (Casanova et al., 2021; Jensen et al., 2021; Vattøy et al., 2022). Schools may therefore need to pay greater attention to how assessment information is presented to students and how teachers help them use that information to monitor their progress.

There is also a practical boundary between educational and technical responsibilities. Digital systems may automate the recording, calculation, visualization, or retrieval of assessment information, but decisions about student learning cannot be reduced to system outputs. A dashboard may reveal a pattern in assessment results, for example, but the interpretation of that pattern still depends on the assessment task, the learning objectives, and teachers' knowledge of their students. School management should preserve this distinction when introducing digital assessment systems.

Data protection presents a further concern, particularly as schools accumulate larger amounts of information about individual students. At a minimum, schools need to determine who has access to assessment information and for what purpose. This issue cannot be addressed only by technical staff because decisions about access are also connected with professional responsibilities and educational needs. The literature included in the present review provides limited direct evidence on data security and privacy in school assessment, however. For this reason, the framework identifies these matters as necessary governance concerns without attempting to prescribe detailed technical or legal procedures.

For high schools in Vietnam, these implications are relevant as assessment practices become increasingly supported by digital technologies. Existing Vietnamese studies in the selected literature indicate growing attention to ICT competence, technology supported assessment, and online formative assessment

(Hai et al., 2016; Phuong Thao & Thi Kim Nhung, 2025). Moving from individual applications of technology toward school level data governance would require attention to both professional practice and institutional arrangements. The framework presented here offers a starting point for that process rather than a standardized model to be applied in the same way across all schools.

7. Discussion

The findings of this study suggest that assessment data governance should be considered as part of the educational process rather than primarily as a technical matter. The five components identified in the framework extend from the generation of assessment evidence to its use in teaching and feedback, while security, accountability, and quality assurance operate across these activities. This interpretation is consistent with formative assessment research, which treats assessment evidence as useful when it informs decisions about subsequent teaching and learning (Black & Wiliam, 2009, 2018). It also helps explain why simply introducing digital assessment platforms may not substantially improve assessment practice.

This issue is particularly relevant to the Vietnamese school context. The use of digital technologies in teaching and assessment has created more opportunities for schools to generate and retain information about students' learning. Earlier Vietnamese research in the selected literature examined teachers' ICT competence (Hai et al., 2016) and teachers' assessment of students' mathematical learning and competence (Hai & Tinh, 2016; Tinh, 2015). These studies were not concerned specifically with assessment data governance, but they illustrate the importance of teacher competence when assessment practices are supported by technology. The present framework extends this discussion from the competence of individual teachers to the way assessment information is handled within the school.

The Hanoi context provides a more specific point for discussion. Phuong Thao and Thi Kim Nhung (2025), in an experimental study conducted at a secondary school in Hanoi, reported positive effects of online formative assessment on students' self regulated learning. Their findings demonstrate the educational potential of digitally supported formative assessment in a local school setting. From a governance perspective, however, the growing use of online assessment also produces a practical question: what happens to the assessment information after it has been generated? If data remain within individual classes, teachers, or separate digital applications, their usefulness for following students' learning over time may be limited. This is one area in which a school level approach to assessment data becomes relevant.

At the same time, a common governance framework should not mean uniform assessment across schools or subjects. High schools in Hanoi may differ in their digital infrastructure, staff capacity, student characteristics, and existing assessment practices. Even within one school, the type of evidence needed in mathematics may differ considerably from that used in languages or other subjects. The framework therefore emphasizes common principles and responsibilities rather than a single method of assessment. Accuracy, validity,

accessibility, transparency, security, and accountability can provide common reference points while leaving teachers room to make subject specific professional judgments.

The role of teachers deserves particular attention in this setting. Digital systems can make scores, responses, and patterns of performance easier to retrieve, but the interpretation of these data remains dependent on assessment competence. This finding is consistent with international studies showing that teachers' knowledge and professional learning are important conditions for effective formative assessment (Andersson & Palm, 2018; DeLuca et al., 2019; Schildkamp et al., 2020). For schools in Hanoi, investment in digital assessment should therefore be accompanied by professional development concerned with interpreting and using assessment evidence, rather than concentrating mainly on the operation of digital platforms.

Students also need a more explicit place in assessment data governance. This is relevant in high school, where students are increasingly expected to take greater responsibility for their learning. International studies have emphasized learner agency and students' engagement with digital feedback (Casanova et al., 2021; Vattøy et al., 2022). The Hanoi study by Phuong Thao and Thi Kim Nhung (2025) similarly provides evidence that online formative assessment can contribute to self regulated learning. Taken together, these findings suggest that access to assessment information should not be understood merely as the ability to view scores. Students need opportunities to understand feedback, recognize their progress, and use assessment evidence when planning subsequent learning.

A more difficult issue concerns privacy, security, and responsibility for assessment data. These matters become more important as schools retain increasing amounts of student information on digital systems. The present review does not contain sufficient Vietnam specific evidence to determine how these issues are currently handled across high schools in Hanoi or elsewhere in the country. It would therefore be premature to propose detailed procedures from the literature reviewed here. Nevertheless, the conceptual framework indicates questions that schools need to address: who is permitted to access particular assessment information, who is responsible for correcting inaccurate records, how information from different assessment activities is combined, and who is accountable for its educational use.

The framework should consequently be viewed as a basis for further empirical investigation rather than as a completed governance model for Vietnamese high schools. Research conducted in Hanoi could examine how assessment data currently move from classroom assessment to digital platforms and school management systems, where responsibilities are located, and what difficulties teachers and school leaders encounter in using these data. Comparisons among schools with different levels of digital implementation would also help determine which elements of the framework are broadly applicable and which need adaptation to local conditions. Such evidence would be necessary before developing more detailed recommendations for assessment data governance in Hanoi and, more broadly, in Vietnamese high school education.

8. Conclusion

The increasing use of digital technologies in student assessment has made assessment information more available, but it has also created questions about how such information should be organized, interpreted, accessed, protected, and used. This study approached these questions from a governance perspective and developed a conceptual framework for high school assessment data based on a qualitative review of the selected literature. The framework connects the educational purposes of assessment with the processes through which assessment data are handled within a school.

A central argument of the study is that assessment data governance should not be reduced to data storage or the technical operation of digital platforms. Its educational value depends on the quality of assessment evidence, teachers' professional interpretation, students' engagement with feedback, and the institutional conditions established by school leaders. Digital systems can support these processes, but they cannot replace professional judgment about student learning. For this reason, governance needs to connect technological arrangements with assessment practice and school management.

This perspective has particular relevance for high schools in Hanoi and Vietnam as digital technologies become more closely integrated into assessment activities. The limited Vietnamese evidence included in this review suggests that technology supported assessment can contribute to teaching, feedback, and students' self regulated learning. At the same time, there remains a need to understand how assessment information is managed beyond individual classrooms and digital applications. The framework developed here offers a theoretical basis for examining this issue at the school level.

The study has limitations. It is based on a qualitative review of a selected body of literature and does not provide empirical evidence on current assessment data governance practices in Vietnamese high schools. The reviewed literature also provides limited direct evidence on privacy, data security, and governance arrangements in the Vietnamese context. Future research should therefore examine the framework empirically in high schools in Hanoi, involving school leaders, teachers, students, and relevant technical personnel. Such studies could clarify how assessment data are currently generated and used, identify difficulties in existing practices, and determine which elements of the framework require adjustment before wider application in Vietnamese high school education.

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