

Comparative Analysis of Assessment Practices in Matriculation and IGCSE Systems in Pakistan: A Multi-Method Qualitative Study of Learning Governance, Cognition, and Equity

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ABSTRACT

Assessments constitute governance instruments that affect learners' cognition and behaviour through governing pedagogies and knowledge production. Instead of being purely evaluative procedures, assessment practices act as regulatory apparatuses which discipline pedagogical actions and legitimize certain kinds of knowledge. This paper presents a multiple method qualitative comparison between two assessment systems, Matriculation (SSC) and IGCSE assessment regimes.

Through semi-structured interviews conducted with 20 participants (16 teachers and 4 students) and document and policy analysis, an explanatory framework of mechanisms is developed to explain the mediation effect of assessment practices on cognition and inequality. Based on a theoretical notion of Assessment-Learning Governance Nexus (ALGN), which sees assessment practices as intermediaries between policy design and stratified educational production in the classroom, the paper investigates assessment practices in Pakistan's Matriculation and IGCSE curricula.

The results show that assessment structures in the Matriculation regime are highly summative and examination-centered, creating learning cultures based on memorization and procedural thinking. Conversely, assessment practices in the IGCSE regime have proved to be diversified with emphasis on analysis, independence of learners, and application of knowledge in real-life situations. Nevertheless, these cognitive benefits are associated with substantial structural inequalities of access, resulting in socio-economic stratifications in the dual education system.

This research addresses assessment and comparative education literature by proposing a framework based on the mechanism-based governance approach to understanding connections between assessment mechanisms and their cognitive/distributive impacts. This study also provides recommendations for reforming the Matriculation System in the direction of hybrid assessments.

1. Introduction

Modern scholarly discourse surrounding assessment no longer sees it as a mere process for quantifying learner performance; rather, it now understands assessment as a mechanism that drives certain processes within education through shaping teaching practices, cognitive development, and policy priorities. The assessment mechanisms define the content of knowledge, drive instructional decisions, and regulate student learning behaviour. The modern research literature on the matter has moved from viewing assessments as tools of evaluation towards tools for driving processes within education systems (OECD, 2023; Baartman & Quinlan, 2024; UNESCO, 2022).

In this view, assessment practices can be seen as integral parts of the larger policy regime that governs the process of teaching and learning using incentive systems, performance measures, and examination frameworks. According to Biesta (2022), today's education systems have been characterized as relying on *measurement-driven governance*, where assessment results impact not only students' achievements but also institutional accountability and teachers' performances. In line with this, OECD (2023) has highlighted the importance of the impact of assessment practices on curriculum narrowing, alignment between instruction and testing, and prioritization of knowledge testing over cognitive skills development.

In South Asia, especially in Pakistan, these aspects take an even greater prominence owing to the examination culture and the presence of two schooling systems. The main secondary schooling system in Pakistan consists of two parallel systems: the national Matriculation system (SSC) and the Cambridge International IGCSE system. Each of these systems follows its own epistemology and philosophy of assessment. Therefore, Pakistan can be considered to be a highly relevant case study for exploring the effects of assessment on learning and education inequity.

Matriculation is firmly entrenched within both public and lower fee-charging private institutions and is widely used as a mode of secondary certification. It follows an examination-based and largely summative assessment approach which is

heavily inclined towards reproducing textbook material. This approach has been criticized for promoting a rote learning approach which constrains the development of concepts and limits the development of analytical and critical skills (McArthur, 2023; UNESCO Pakistan, 2023). Matriculation examination success is always associated with rote learning facilitated by coaching centers and through practice from previous exam papers.

Conversely, the Cambridge IGCSE philosophy of education involves the cultivation of analytical skills, practical training, and assessment using varied methods, such as coursework, case studies, and problem solving. As Cambridge Assessment International Education points out, the aim of the IGCSE program is the cultivation of the ability to think critically, ask relevant questions, and comprehend theories (Cambridge Assessment International Education, 2023). Comparative educational studies reveal that diversified assessment is associated more often with a higher level of cognitive engagement and autonomy in learning (Newton & Shaw, 2022; Jalilzadeh & Coombe, 2023; Xu & Carless, 2022). Yet, in spite of all the benefits that diversified assessment systems bring to pedagogy, they remain highly stratified because they can only be applied in urban schools that conduct teaching through English with students having a relatively high socio-economic background.

Nevertheless, there still exists an analytical gap regarding the systems. Existing studies have concentrated mostly on three themes: (a) distinctions in curricula between the two programs, (b) variations in students' academic achievement, and (c) views on memorization versus critical thought development between Matriculation and IGCSE. There is still very little knowledge about the way assessment systems function as mechanisms which lead to different types of cognitive and social consequences. To rephrase, although the distinctions between the two programs have been well recognized by many studies, the link between assessment system design and learning behaviour, cognition, and inequality has not been adequately researched yet.

The issue is especially important now when the focus of global educational policies on competency-oriented reforms grows. Lack of understanding of the mechanisms underlying learning processes will cause policy reforms to remain superficial, concentrating solely on changes in curricula.

This research aims at addressing this research gap through the application of a qualitative multi-methods comparative design that seeks to investigate how the assessment structure in the context of the Matriculation and IGCSE programs affects learning cognition and education inequalities in the context of Pakistan. As opposed to other studies that viewed assessment outcome as an endpoint, this research views assessment as a mechanism of governance situated within institutional systems.

To address this issue, the researcher employs the concept of Assessment-Learning Governance Nexus (ALGN), a theoretical framework that helps to understand how the assessment structure impacts learning outcomes.

The current paper is grounded on the existing literature on assessment and governance (Biesta, 2022; Baartman & Quinlan, 2024; OECD, 2023). At the same time, a unique feature of the research is its investigation of the connection between assessment and cognition in the context of dual education.

In terms of its empirical contribution, this study makes an important contribution to the comparative education literature, which can offer a contextually sensitive analysis of the dual assessment system in Pakistan. It provides a combined view through teachers' and students' experiences and documentation and policy analysis of examination papers.

This study is significant in three ways. Firstly, it makes a theoretical contribution to the literature on assessment as governance through a mechanistic explanation of how assessment systems affect cognition. Secondly, it provides an empirical contribution to the comparative education literature through analysis of a poorly studied dual system context in the Global South. Thirdly, it offers practical insights into assessment reform efforts that must balance equality and cognitive quality in secondary education systems. Such a conflict between standardized learning-oriented assessment and competency-based learning has also been seen in other education systems in the Global South: India, Bangladesh, Nigeria, and Kenya. Comparative scholarship shows that the examination-centred system often perpetuates stratification of education and inhibits higher-order thinking.

2. Theoretical Framework

The theoretical framework of this study draws on the most recent debates on competency-based education, the reform of assessment, transformative pedagogy, and technological innovation in learning environments. Some recent research suggests that competency learning can foster critical thinking, problem solving, creativity, and pedagogical engagement with the learner, not rote learning and examination-based training (Akala, 2021; Wawire et al., 2025). Likewise, the OECD (2023) points out that contemporary education systems need to incorporate curriculum and assessment methods that reflect the skills and knowledge relevant to the twenty-first century, such as collaboration, adaptability, innovation, and lifelong learning skills. Gert Biesta (2022) also challenges performative cultures of education which focus on measurable educational outcomes rather than on meaningful human development and argues for a more holistic and democratic approach to education. Furthermore, Dylan Wiliam (2017) mentions that the ways in which assessment impacts on classroom instruction

and students' thinking vary widely, for example, whether it facilitates analysis or memorization-based learning. In support of this view, Linda Darling-Hammond et al. (2020) suggest that transformative learning spaces should incorporate aspects of equitable learning outcomes, developmental learning, and student agency, along with deeper learning. It is also proved that the implementation of cutting-edge learning resources like AI-driven games, 3D printing, and interactive workshops is strongly linked to better student learning, engagement, and cognitive growth. Together, these can be used as a comprehensive theoretical framework to explore the interaction between assessment structures, pedagogical practices, and technological innovations in relation to their effect on cognition, educational quality, and equity in the current learning systems (Cano et al., 2023; Irshad, 2025).

2.1 Assessment as a Governance Mechanism

Modern research in the field of education tends to perceive assessment as part of the general transition from evaluation to governance, during which assessment acts as a technology of policy that structures educational behaviour through organization rather than just measuring educational achievements. In other words, assessment becomes an element of what Biesta (2022) calls *measurement-driven governance* when performance indicators serve as key tools used by educational systems to regulate their activities, schools, teachers, and students. This approach correlates well with the global trend in the international scientific community, according to which assessment systems tend to be perceived as control mechanisms that prioritize educational institutions and influence pedagogy through accountability requirements (OECD, 2023; UNESCO, 2022).

With regards to governance, the act of assessment fulfills four roles which are interconnected. The first involves setting epistemological boundaries through determining what forms of knowledge are acceptable under the rubric of curriculum design. It does not do so impartially; instead, some forms of knowledge are deemed superior to others because they are standardized, measurable, or codifiable. Second, assessment is an indirect regulator of the curriculum. As such, it indirectly influences how teachers teach in relation to what should be taught in order for pupils to pass their exams. Third, it operates as a set of behavioural incentives. This means that pupils make decisions on how to spend their time and energy based on rewards provided in the form of assessments. Lastly, assessment generates educational stratification. This occurs due to differences in resource access between learners in conjunction with the demands made of them through assessment practices (Sahlberg, 2021; Baartman & Quinlan, 2024).

Tensions also exist within the literature concerning educational governance. Whereas one line of thought stresses the homogenizing role of high-stake assessments, another school of thought recognizes the potential of assessment as an agent of change in learning through the formative approach of conducting assessment. Formative assessment has been found effective in increasing cognitive engagement and fostering autonomy among learners (Van der Steen et al., 2022; Wiliam, 2021; Hopfenbeck et al., 2023).

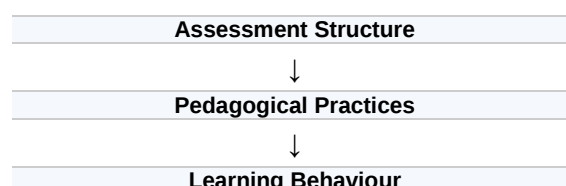
This particular dilemma is especially significant within the education systems of the Global South where high-stake examinations can be said to exist alongside competency-based learning reforms on the policy level. According to Tikly (2022), these particular contexts have a consistent tendency of demonstrating a *policy-practice disjuncture*. Indeed, reform efforts aimed at developing critical thinking competencies of students continue to be thwarted by established examination cultures that value recall-oriented performances of students. It becomes necessary to understand that simply describing assessment systems may prove insufficient since a mechanistic approach is required to explain how assessment affects learning behaviour.

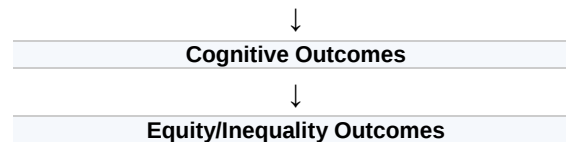
2.2 The Assessment-Learning Governance Nexus (ALGN)

Drawing upon governance-oriented and socio-cultural theories of assessment, this study proposes the Assessment-Learning Governance Nexus (ALGN) model as a conceptual framework for understanding the causal mechanisms that connect assessment structures to cognitive and equity effects through institutional mediation.

Instead of seeing assessment effects as outcomes of specific examination designs, the proposed ALGN framework views assessment as a mediating governance process involving a series of transformations (see Figure 1):

Figure 1
ALGN Framework





This conceptual model makes three important contributions to the literature. Firstly, it brings together two separate areas of assessment theory: (i) the role of assessment as pedagogy impacting classroom practice and (ii) the impact of assessment as distribution in generating educational inequities. With the ALGN model, the connection is explicitly theorised by combining both the cognitive and equity dimensions.

Secondly, the ALGN model stresses the importance of pedagogical mediation as a crucial yet unexplored level of analysis. Assessment comparison tends to assume a rather straightforward association between type of assessment and learning impact. However, empirical studies increasingly suggest that a similar assessment regime may produce highly varied effects based on the engagement of teachers with assessment demands, available resources at the institutional level, and dynamics within the classrooms (Newton & Shaw, 2022; Jalilzadeh & Coombe, 2023; Xu & Carless, 2022). Consequently, pedagogical context becomes viewed in the framework as an active mediator.

Finally, the concept of structural inequality is introduced into the framework through its explicit inclusion of the differential cognitive development consequences of different assessment regimes. This is because sociological explanations of education systems view assessment both as an instrument for measuring already attained cognitive development and as an institution actively involved in the production of cognitive advantage because of different levels of preparation and familiarity with language (OECD, 2023; UNESCO, 2022).

In this theory, high-stakes summative regimes are viewed as producing *performance compression*, where the need for high exam performance makes both students and educators emphasize test-taking skills over concept exploration. However, the proposed framework avoids making any deterministic predictions.

Formative and diversified assessments are likely to generate *cognitive expansion* because repeated feedback, application tasks, and diverse types of assessments are capable of triggering deeper information processing, knowledge integration, and increased learner autonomy (Hopfenbeck et al., 2023; Baartman & Quinlan, 2024). At the same time, existing literature also suggests that such assessment systems cannot be viewed as automatic sources of equality because their effects depend on infrastructural, teacher-related, and learner-related factors.

Thus, the ALGN framework does not adopt an oversimplified approach to the distinction between traditional and modern assessment systems. On the contrary, it promotes a relational perspective according to which the effects of different assessment systems are contingent, mediated, and context-specific. As a result, it offers a nuanced account of empirically observed distinctions between assessment systems, such as Matriculation and IGCSE.

To conclude, the presented framework considers assessment as a complex process of governance based on institutional mediation, which has the potential to affect both the formation of cognition and the emergence of educational inequities. In other words, the framework presents a consistent explanation of assessment effects based on three distinct bodies of literature.

3. Methodology

3.1 Research Design

This study adopts a qualitative multi-method research approach that is grounded in interpretivism. It does not seek to establish causality through statistical methods, but rather to understand the underlying mechanisms that explain how assessment systems influence learning cognition and educational inequity.

The use of multi-methods in this study is justified since assessment processes occur at several levels: in the classroom, in exam structure, and within policies. It would be limiting to rely on only one data source in explaining the phenomenon.

The study therefore combines three qualitative research methods:

1. Semi-structured interviews
2. Document analysis
3. Policy analysis

Triangulating the data allows for richer analysis in that it facilitates cross-referencing between experiential data (teacher/student experiences), institutional documentation (examination questions/grading criteria), and systemic intent (policy documents).

Triangulation in this study is not used as a confirmatory method but as a theoretical tool. It allows for convergence and divergence across the various datasets to aid in analysis.

3.2 Sampling Strategy

Purposive sampling was used as a sampling strategy in order to generate varied experiences with regards to the two education systems that exist within Pakistan: Matriculation and IGCSE. The study was carried out in Karachi, Pakistan, an important metropolitan city with a lot of schools within the public sector which follow the Matriculation examination system and those within the private sector that provide instruction under the Cambridge International General Certificate of Secondary Education (IGCSE). The participants were selected through purposive sampling technique which included those directly engaged in the assessment practices in secondary schools in Matriculation and IGCSE schools.

Karachi was chosen as a site for the study because of the following reasons:

- the city is home to varied schooling systems,
- the presence of national and international curricula,
- economic differences between the two schooling systems, and
- examination-focused teaching and learning practices.

A total of 20 participants took part in the study:

- 8 Matriculation teachers
- 8 IGCSE teachers
- 2 Matriculation students, and
- 2 IGCSE students

Purposive sampling was done based on the following criteria:

- a minimum three-year experience of teaching (teachers),
- enrollment in the particular examination system (students), and
- differences in schooling institutions.

3.3 Data Sources and Rationale

(1) Semi-Structured Interviews

Semi-structured interviews were adopted as an interview technique since they offer a flexible but structured way of gathering subjective meanings, professional interpretive knowledge, and experience of assessment processes.

In particular, this technique was deemed appropriate for this study due to the fact that there is no way of observing effects of assessments in the real world; effects arise through perceptions and practices in different institutions. The technique thus provided a means to gain insight into:

- teacher decision-making in designing the assessment process,
- pedagogical strategies employed in response to examination requirements,
- students' approaches to learning in preparation for assessment,
- the cognitive demands placed by assessments.

(2) Document Analysis

The use of document analysis was considered necessary for examining the formal structure of assessments independent of participant understanding.

Documents used include:

- Matriculation examination papers (annual board examinations of recent years),
- Cambridge IGCSE examination papers,
- related marking schemes.

In this study, document analysis is methodologically crucial since it permits assessment of the structure of the assessment process in its own right, as opposed to perceptions about the process.

Documents are analysed systematically by coding them against a structured analytical framework concerning:

- cognitive demand (recall, application, analysis),
- question types (definitional, problem, case),

- skill focus (procedural versus conceptual).

(3) Policy Analysis

The use of policy analysis helped situate the assessment practices in their wider policy context. Such analyses involved:

- National curriculum and assessment policies (in Pakistan)
- Policies of Cambridge Assessment International Education

Policy documents were carefully scrutinized to identify their stated aims, their intended cognitive outcomes, and policy intentions as expressed through their assessment designs.

Such a layer of analysis was crucial since assessments were seen not only as practices but also as policy tools designed to govern particular processes. Policy analysis helped differentiate between the intended purposes and functions of the curriculum and what was actually achieved via assessments.

3.4 Data Analysis

Data were analysed by reflexive thematic analysis based on the six steps of Braun and Clarke (2006). Inductive open coding was done as an initial step to identify common themes across interviews, examination documents, and policy texts. Codes were then categorized into overarching thematic codes that fit with the conceptual framework for the study. Themes were reviewed iteratively and compared across participants and across documentary evidence in order to improve the quality of the analyses in terms of trustworthiness. Thematic categorisation and organisation of the data were facilitated by NVivo 14 software.

This type of analysis was selected as appropriate since the research question required identification of recurring influence mechanisms rather than themes. For improved analytical rigour, comparative analysis was conducted. Such analysis made it possible to generate and test themes through comparison across heterogeneous datasets and multiple types of evidence. As an analytical validity technique, triangulation of evidence was used.

3.5 Researcher Reflexivity

Given the interpretative nature of qualitative research, researcher reflexivity was sustained throughout the research process as an approach to reduce researcher bias during data analysis. Reflexivity was not used as a one-off stage in research but integrated into every part of the research process as a continuous methodological approach.

Following standard contemporary qualitative practice, the researcher recognized their own stance as an education analyst and their pre-conceived notions of both the Matriculation and IGCSE systems. This knowledge base of the education sector provided the researcher with a better ability to gain an understanding and analysis of the issues under consideration; however, it did present the possible risk of researcher bias when analysing and interpreting the distinctions between the systems' normative frameworks.

Several methods were utilized to overcome these issues: validation through iterative coding; cross source triangulation; reflexive memo writing.

3.6 Trustworthiness and Rigour

In order to strengthen the methodology employed in this study, Lincoln and Guba's guidelines for qualitative trustworthiness were considered as follows:

- **Credibility:** assured by triangulating methodologically between interviews, documents, and policies, thereby improving interpretive validity.
- **Transferability:** assured by providing detailed context regarding both systems, allowing readers to judge their relevance to other settings.
- **Dependability:** assured by documenting procedures for coding and theme generation.
- **Confirmability:** enhanced by reflexive analysis and keeping an audit trail in order to reduce researcher bias.

Instead of checking boxes on such criteria, they become an integral part of the analysis in order to enhance interpretive validity and systematic defensibility.

3.7 Ethical Considerations

Approval for ethics was sought and obtained prior to data collection. Participants volunteered to take part in the study and provided informed consent.

Some key considerations included:

- the anonymity of the identity of all participants by using pseudonyms,

- safekeeping of interview and document data,
- right to withdraw without penalty,
- absence of identifiable institutional information.

Due to the educational setting, special care was taken to ensure that participation had no bearing on teachers' evaluations or students' grades.

4. Findings

The results are presented thematically yet analysed based on a cross-source triangulation perspective (interviews, examination papers, and policy). The analysis does not focus merely on perceptions, but rather the recurring governance approaches by which assessment constructs learning processes and cognitive engagement.

Theme 1: Assessment Structures as Drivers of Pedagogical Orientation

A pattern that emerged from the interviews and document analysis is the link between the type of assessment used and pedagogy in the classroom.

In regard to the Matriculation program, there was a prevalent theme in the teacher interviews on the connection between the way the teachers conducted their lessons and the predictable nature of questions and repeat papers. A Matriculation teacher explained that most students tend to memorize past paper answers as examination success is largely dependent on repetition, and not conceptual understanding. This was further emphasized by the document analysis which revealed the high occurrence of recall, reproduction of definitions, and predictable answers. A comparison of Matriculation papers and IGCSE papers showed that the Matriculation papers were very much of a recall type, reproducing passages from the book, while the IGCSE papers focused more on interpretation, reasoning, and application. This shows that there is a crucial role played by the assessment process as an aid in curriculum guidance since the test format guides instruction towards content reproduction and not idea exploration.

For the IGCSE program, a different pedagogical approach was evident from both the teacher interviews and document analysis. There was a prevalence of explanation and application of concepts in the teachers' method of teaching. An IGCSE teacher said that students are urged to explain concepts, apply these concepts in unfamiliar contexts, and justify their thinking in class discussions. This was also supported by document analysis where there were a high number of questions based on scenarios and applications using reason.

This shows that assessment processes form an integral part of pedagogic governance.

Theme 2: Cognitive Demand as a Structurally Embedded Feature of Assessment

Indeed, there was a marked difference observed in the cognitive processes inherent in the design of the assessments in both curricula.

The examinations in the Matriculation curriculum place emphasis on the use of lower-order thinking skills like recall and recognition. A Matriculation student said: *"Remembering from guides and past papers is a major key to success."* Such a design structure results in the generation of what might be termed *cognitive engagement compression*, whereby the students tend to opt for efficiency in memorization over conceptual comprehension.

On the other hand, the IGCSE tests have a higher tendency to employ higher-order cognitive processes such as analysis and evaluation. Nevertheless, it was evident from the data that cognitive processes were not experienced uniformly in all subject areas or institutions.

Thus, the cognitive results obtained are neither a function of the system alone nor deterministic. One IGCSE teacher commented: *"Students will be expected to explain their reasoning and use concepts to apply them to situations that are different."* A Matriculation student said key points from guides and past papers are mostly the determinant of success.

Theme 3: Assessment Regimes and Learning Autonomy Formation

The final critical mechanism discussed in relation to the findings involves the interaction between the structure of assessment and the process of promoting autonomous learning.

The assessment process in the Matriculation system was shown to be dependent in nature as described through both student and teacher narratives. It is evident that students at this level were considered dependent learners since their learning process was highly dependent on private coaching classes, teacher's notes, and revision of old tests. One of the Matriculation teachers wrote the following observation: *"Matriculation students depend heavily on teacher notes and expected questions as there is a high level of dependence on accuracy of reproduction in examinations."* This shows assessment structure is clearly associated with dependency.

In the case of the IGCSE class, learning was more of an independent process involving research and discussion. An IGCSE student said: "In class, we are encouraged to research topics on our own and talk about different perspectives." It appears that the assessment process involved an equal playing ground when it comes to cognition between the teacher and learner.

Theme 4: Equity-Quality Tension as a Structural Outcome of Dual Systems

Figure 2

Comparison of Matriculation and IGCSE Systems

Dimension	Matriculation	IGCSE
Assessment Style	Summative	Mixed
Question Type	Recall Based	Analytical
Learning Focus	Memorization	Application
Student Role	Passive	Independent
Cognitive Demand	Lower order	Higher Order

An important contradiction in structure arose concerning the quality and access to education in both programs (see Figure 2).

The Matriculation examination ensures wide access due to its low cost and standardized nature across the nation. However, wide access entails a lower level of cognitive complexity. On the other hand, the IGCSE program demonstrates higher cognitive complexity but suits analysis and application.

Accessing the IGCSE program is restricted by structures such as cost, institutions offering the program, and social and economic factors. This leads to a built-in trade-off between equality and quality in education. An increase in cognitive complexity implies reduced access in the system. This suggests that inequality in the program is not accidental but inherent in the assessment structure of the program.

Theme 5: Policy-Practice Congruence and Institutional Translation of Assessment Ideologies

There is evidence of policy analysis that shows substantial congruence in terms of intentions for curricula and assessments in both education systems.

The documents regarding Matriculation policies stress syllabus completion, examination results, and mastery of content knowledge. All these aspects have been noted to feature prominently in the examination format and pedagogical practices.

On the other hand, the Cambridge IGCSE programs explicitly stress the importance of developing skills, understanding concepts, and applying reasoning, which are evident from examination format and pedagogical practices.

The results of this study show that congruence in policy does not guarantee an equal opportunity for learning for all students. It only guarantees ideologically sound curriculum and pedagogy.

5. Discussion

Assessment systems are defined as governance mechanisms that work within an institution in a way that transcends their evaluative functions and actively constructs pedagogy and cognition, in addition to stratifying the education sector. Overall, the data presented in this paper confirm the Assessment-Learning Governance Nexus (ALGN), indicating that assessments exist through a combination of mechanisms rather than individual instruction effects.

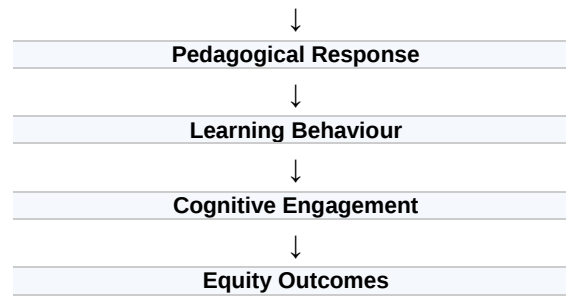
Conceptually, the results highlight the governance perspective on assessments and consider assessment as a *steering technology* that indirectly controls educational behaviour (Biesta, 2022; OECD, 2023). Specifically, in this current study, this steered process can be seen in the way assessment design systematically controls pedagogical orientation within both the Matriculation and IGCSE programs. The use of recall-based exams in Matriculation promotes practice of memorizing and predictable exam preparation. On the other hand, the diverse assessments in the IGCSE program produce multiple pedagogical practices such as explaining, applying, and investigating.

Nevertheless, this study goes beyond the governance approach and identifies the mechanistic path through which assessment impacts educational behaviour. More specifically, contrary to a direct causation, the ALGN model highlights the following mediating sequence (see Figure 3):

Figure 3

Assessment Design to Equity Outcomes Model

Assessment Design



As can be seen from the above-described causal chain, the design of examinations dictates the way of teaching, and hence, learning. That is why one can conclude that in Matriculation's examination design, which focuses on recall, surface learning is used, whereas in IGCSE's examination design, which focuses on information application and analysis, deep learning takes place together with self-learning. These trends comply with the recent literature on formative assessment and cognition (Van der Steen et al., 2022; Wiliam, 2021; Baartman & Quinlan, 2024), although applied within comparative education governance.

Furthermore, this research provides compelling evidence against binary thinking that presents Matriculation and IGCSE as two diametrically opposite approaches. Rather than taking this stance, one should recognize that both approaches embody particular educational governance logics, which emphasize different objectives. The former approach embodies a mass standardization logic and focuses on scalability, universality, and accessibility, at least to some extent at the cost of cognitive development of students. The latter approach represents a logic of competency enhancement and focuses on analytical skills and deep cognition but restricts access to education to certain groups of students.

On the other hand, the article contains several crucial caveats regarding the role played by the ALGN framework. Although assessment design plays an important structuring role, its influence is not absolute: it is mediated through various contextual and institutional factors (i.e., school setting, teachers' expertise, resources, and coaching intensity). Therefore, the results show that assessment influences educational processes conditionally and cannot be seen as a cause-and-effect relationship.

The above-stated interpretation is consistent with recent ideas about comparative education and the recommendation to refrain from concentrating on the assessment of the systems' mechanisms in the absence of taking into account the socio-institutional mediating context when analysing learning (Sahlberg, 2021; Tikly, 2022). The results are congruent with the wider international discussion and debate on assessment reform in developing education systems, where policy makers are increasingly looking for a balance between educational access and the learning outcomes required to be assessed by competency criteria.

In this regard, the research offers theoretical contribution to the discourse that assesses systems of assessment not merely as isolated agents affecting learners' cognitive processes or as passive mirrors reflecting policy objectives, but as active instruments whose impacts are mediated by institutions.

In particular, the identified conflict between equity and quality in both systems reveals the structural impact of assessment governance. The Matriculation system creates wider access but achieves its objective at the cost of creating an assessment mechanism that stresses the reproduction of content knowledge rather than its conceptual understanding. On the contrary, the IGCSE assessment system creates opportunities for cognitive development; however, it does so at the cost of reinforcing inequality because of limited access to its programs.

In general, the results of the analysis confirm one of the primary assumptions made in this study: assessment systems operate as layered mechanisms governing cognition and stratifying opportunity structures.

In this regard, the present research expands upon the previous literature by moving from the analysis of the examination systems' features and processes to an analysis of their mechanisms, which enable influencing learning and forming an educational reality. Therefore, the present paper is aimed at considering educational inequality and cognition both in the context of the assessment design and the role of the institution of governance.

6. Conclusion

To explain how the assessment systems that exist in the Matriculation (SSC) and Cambridge IGCSE systems work as means of governing which have effects on learning cognition and inequalities within education, the concept known as Assessment-Learning Governance Nexus (ALGN) was introduced through this study. This novel concept suggests that an assessment system is a form of governance that affects the interrelation between the process of policy-making, teaching practice, cognitive involvement, and equity.

This study found that the role played by the assessment system within education is not limited to the practice of testing; instead, the assessment systems themselves work as institutional entities in shaping the education itself thanks to their governance principles. Because the stakes are very high and the assessments in the Matriculation system are standardized, the process of governance ensures strict connection between the teaching practice and testing, which results in prioritizing the content replication and memorizing. At the same time, because the assessment system in the IGCSE system is diversified, it leads to cognition and learner's autonomy, although not equal.

It is important to stress that, through this study, it becomes evident that the differences between assessment systems are, apart from being pedagogic, structural governance logics. The Matriculation system represents a mass access logic which prioritises standardisation and scalability. On the other hand, IGCSE represents a competency enhancement logic focusing on cognitive processes and competencies. Nonetheless, these governance logics also have unintended side effects, which manifest in the form of an equity-quality dilemma in dual education systems.

Second, the study also warns about deterministic interpretations of assessment outcomes. While cognitive and learning outcomes depend on assessments, they are also influenced by factors such as school type, teacher quality, resource distribution, and tutoring culture. Consequently, assessments should be perceived as a relational governance instrument whose outcomes arise from its interactions with other educational institutions.

Overall, this study provides a mechanism-based explanation about the ways in which assessment systems both influence cognition and reproduce educational inequality in society. Firstly, this study expands the current body of knowledge by integrating a theory of governance and comparative studies of assessments in the Global South perspective. The scope of this comparison could be expanded to further educational systems and the long-term consequences of the assessment system on access to higher education, employability, and social mobility could be explored in future research.

7. Policy Recommendations

The findings indicate that there needs to be a simultaneous consideration of both cognitive and equitable issues for any effective assessment reforms. Recommendations on future policy actions can include the following:

1. Hybrid Assessment Incorporation

There should be a strategic integration of the combination of formative and summative assessment in the Matriculation system. This would involve:

- contingent continuous assessment modules,
- application and analytical assessment questions,
- strategic feedback approaches.

These measures will eliminate the excessive dependency on memory skills during examination preparation and make the entire assessment process more accessible.

2. Teacher Professional Competence Building

Sustained teacher development programmes on:

- questioning pedagogy,
- proficiency in assessment practices,
- designing high-level cognitive questions.

Teacher capacity building remains an important mediation variable in implementing assessment reforms; otherwise, policy reforms will remain only on paper.

3. Access Expansion with Equality Focus

In order to deal with the disparities between the two systems, targeted scholarships and subsidy schemes can be considered for students of less privileged background who wish to pursue an IGCSE or other competency-based courses. Such policies could include:

- financial aid in the form of scholarships,
- discounted examination fees,
- expansion of other learning institutions providing alternatives.

4. Assessment Diversification in National Examinations

Incorporate reform in Matriculation examination by including:

- project-based assessment,

- situation-based problem-solving exercises,
- constrained analytical response questions.

The inclusion of such an array of assessment types would slowly encourage the transformation of education culture towards conceptual knowledge without losing scale of operations in the system.

8. Limitations

Though this paper provides significant information both theoretically and empirically, there are several limitations to be considered.

Firstly, the qualitative sample used in this study (N = 20) is relatively small. Although this is adequate for interpreting qualitative data, it has limited external validity. Nevertheless, this study did not intend to establish statistical generalisability.

Secondly, the study took place in selected urban schools in Karachi where there is significant institutional diversity among Matriculation and IGCSE systems, but may not reflect the reality in other parts of Karachi or indeed the whole of rural Pakistan.

Thirdly, this paper offers a cross-sectional analysis and does not have longitudinal data. It means that the effect of assessment experiences on the development of cognitive abilities is not measured here. Such research should be done in the future.

Finally, even though triangulation was applied in conducting the interviews, document analysis, and reviewing policies, there is no denying the interpretative nature of qualitative data and thus, the positionality of researchers. This means that future studies can build on this research by using comparative longitudinal designs and adopting mixed methods, which will allow for more testing and validation of ALGN in different settings.

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