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EVIDENCE-BASED MECHANISMS FOR ENSURING THE QUALITY OF UNIVERSITY STUDENTS' LEARNING ACTIVITY: AN INTEGRATIVE REVIEW OF INTERNATIONAL FRAMEWORKS AND META-ANALYTIC FINDINGS

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Abstract. Using an integrative review design, the article synthesises mechanisms for ensuring the quality of university students' learning activity drawn from ESG 2015, constructive alignment, student engagement, self-regulated learning and formative feedback theory, and large meta-analyses. The strongest effects are reported for formative evaluation (d=0.90), feedback (d=0.73) and teacher–student relationships (d=0.72); performance self-efficacy shows the highest correlation with achievement (r=0.59). Mechanisms are classified into five levels, and a multi-level framework with indicators is proposed. Its application is discussed for Uzbekistan, where enrolment rose from 808.4 to 1535 thousand students and there are about 28.9 students per teacher.

Keywords: learning activity quality, quality assurance, ESG 2015, student engagement, self-regulated learning, formative feedback, meta-analysis, higher education

OLIY TA'LIM MUASSASALARI TALABALARINING O'QUV FAOLIYATI SIFATINI TA'MINLASHNING DALILLARGA ASOSLANGAN MEXANIZMLARI: XALQARO MODELLAR VA META-TAHLIL NATIJALARINING INTEGRATIV SHARHI

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Annotatsiya. Maqolada talabalar o'quv faoliyati sifatini ta'minlash mexanizmlari ESG 2015, konstruktiv muvofiqlik, talabalar ishtiroki, o'z-o'zini boshqarib o'qish va formativ baholash nazariyalari hamda yirik meta-tahlillar asosida integrativ sharh usulida tahlil qilingan. Eng kuchli ta'sir formativ baholash (d=0,90), teskari aloqa (d=0,73) va talaba–o'qituvchi munosabatida (d=0,72) qayd etilgan; o'zlashtirish bilan eng yuqori korrelyatsiya natijaviy o'z-o'ziga ishonchda (r=0,59) kuzatiladi. Mexanizmlar besh darajaga ajratilib, indikatorli ko'p darajali model taklif etildi. Talabalar soni 808,4 mingdan 1535 mingga oshgan va bir o'qituvchiga ≈28,9 talaba to'g'ri keladigan O'zbekiston sharoitida modelni qo'llash yo'llari ko'rsatildi.

Kalit so'zlar: o'quv faoliyati sifati, ta'lim sifatini ta'minlash, ESG 2015, talabalar ishtiroki, o'z-o'zini boshqarib o'qish, formativ baholash, meta-tahlil, oliy ta'lim

ДОКАЗАТЕЛЬНЫЕ МЕХАНИЗМЫ ОБЕСПЕЧЕНИЯ КАЧЕСТВА УЧЕБНОЙ ДЕЯТЕЛЬНОСТИ СТУДЕНТОВ ВУЗОВ: ИНТЕГРАТИВНЫЙ ОБЗОР МЕЖДУНАРОДНЫХ МОДЕЛЕЙ И МЕТААНАЛИТИЧЕСКИХ ДАННЫХ

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Аннотация. В статье методом интегративного обзора проанализированы механизмы обеспечения качества учебной деятельности студентов на основе ESG 2015, конструктивного выравнивания, теорий вовлечённости, саморегулируемого обучения, формативного оценивания и крупных метаанализов. Наибольший эффект показывают формативное оценивание (d=0,90), обратная связь (d=0,73) и отношения преподавателя и студента (d=0,72); самая высокая корреляция с успеваемостью – у результативной самоэффективности (r=0,59). Механизмы сгруппированы по пяти уровням, предложена многоуровневая модель с индикаторами. Обсуждаются пути её применения в Узбекистане, где контингент вырос с 808,4 до 1535 тыс. студентов, а на одного преподавателя приходится ≈28,9 студента.

Ключевые слова: качество учебной деятельности, обеспечение качества образования, ESG 2015, вовлечённость студентов, саморегулируемое обучение, формативное оценивание, метаанализ, высшее образование

Introduction

Universities have always claimed to care about how well their students learn, yet for most of the twentieth century this concern was expressed through inputs: the qualifications of staff, the size of libraries, the hours listed in a curriculum. The shift towards judging quality by what students actually do and achieve is relatively recent, and it changes the questions that quality assurance has to answer. If the quality of a degree depends on the quality of the learning activity behind it, then institutions need mechanisms that reach into the lecture hall, the seminar room, the assessment task and the student's own study habits. The European Standards and Guidelines (ESG) adopted in 2015 make this explicit by requiring that programmes be delivered in a way that encourages students to take an active role in creating the learning process and that assessment reflects this approach [1].

The conceptual ground for this shift was prepared decades earlier. Harvey and Green distinguished several meanings of quality in higher education, among them quality as exceptional, as perfection, as fitness for purpose, as value for money and as transformation [2]. The last of these is the most demanding, because it locates quality in the change that occurs in the learner rather than in any property of the institution. Quality assurance built on the transformative view cannot stop at checking documents; it has to ask whether the conditions an institution creates actually lead students to learn more deeply.

The question has special weight in systems that have expanded quickly. In Uzbekistan the number of students rose from 808.4 thousand in 2021/22 to 1535 thousand in 2025/26 [3]. Growth on this scale means larger groups, more diverse prior preparation and heavier assessment loads for staff. Under such

conditions, quality mechanisms that rely on the personal attention of a small number of experienced teachers do not scale, and decisions about where to invest limited resources need to be guided by evidence about what works.

That evidence exists, though it is scattered across several research traditions that seldom speak to each other. Curriculum theorists have developed the principle of constructive alignment, under which intended learning outcomes, teaching and learning activities and assessment tasks are designed as one coherent system [4]. Researchers of student development, starting with Astin's theory of involvement, argued that students learn in proportion to the physical and psychological energy they invest in their studies [5]. Kuh extended this into the concept of student engagement, which joins what students do with what institutions do to draw them into educationally purposeful activity [6]. Fredricks, Blumenfeld and Paris showed that engagement has behavioural, emotional and cognitive dimensions that need to be measured separately [7], and Kahu proposed a framework linking structural and psychosocial influences, engagement itself and its proximal and distal consequences [8].

A second tradition focuses on the learner's capacity to direct his or her own study. Zimmerman described self-regulated learning as a cyclical process of forethought, performance and self-reflection, in which students set goals, monitor their progress and adjust their strategies [9]. Pintrich and colleagues operationalised motivational beliefs and learning strategies in the 81-item Motivated Strategies for Learning Questionnaire, which became one of the most widely used instruments in the field [10]. A third tradition, rooted in assessment research, demonstrated that formative assessment can raise achievement substantially when it is built into everyday teaching [11], and Nicol and Macfarlane-Dick reframed feedback as a process that should strengthen students' own ability to regulate their learning, summarising this in seven principles of good feedback practice [12].

Quantitative syntheses give these traditions a common metric. Freeman and colleagues pooled 225 studies of undergraduate science, engineering and mathematics teaching and found that active learning raised examination performance and reduced failure rates [13]. Hattie's synthesis of more than 800 meta-analyses ranked influences on achievement by effect size and proposed d=0.40 as a "hinge point" above which an intervention can be considered worth the effort [14]. Richardson, Abraham and Bond reviewed psychological correlates of university grade point average [15], and Schneider and Preckel summarised 38 meta-analyses on achievement in higher education [16].

What is still missing is a structure that connects the evidence to the levels at which decisions are made. Quality frameworks such as ESG speak to agencies and institutions; meta-analyses speak mostly to teachers and course designers; self-regulation research speaks to students. A national quality agency, a university quality office and a department head need to know which mechanisms belong to them and how their contribution can be observed.

The aim of the study is to synthesise international quality frameworks and meta-analytic findings on university learning, to classify evidence-based mechanisms for ensuring the quality of students' learning activity by level of governance, and to propose a multi-level framework with indicators that can be adapted to the conditions of a rapidly massifying higher education system such as that of Uzbekistan.

Materials and methods

The study follows the logic of an integrative review, a design suited to combining theoretical frameworks, policy standards and quantitative syntheses within one analysis. Unlike a systematic review aimed at estimating a pooled effect, an integrative review seeks to build a conceptual structure from heterogeneous sources. The review therefore does not report a new meta-analysis and does not claim exhaustive coverage of primary studies; it works at the level of established frameworks and of meta-analyses and systematic reviews that have already aggregated the primary evidence.

Sources were identified through searches in Scopus, Web of Science, ERIC and Google Scholar. Search strings combined terms for the outcome ("student learning", "academic achievement", "academic performance", "learning quality"), for the population ("higher education", "university students", "undergraduate") and for mechanisms ("quality assurance", "constructive alignment", "student engagement", "self-regulated learning", "formative assessment", "feedback", "active learning"), together with design filters ("meta-analysis", "systematic review"). The period covered extended from 1984, the year of Astin's involvement theory, to 2025. Reference lists of key reviews were checked for foundational works.

Four inclusion criteria were applied. First, a source had to deal with higher education or provide evidence that the original authors explicitly applied to it. Second, it had to be either a foundational conceptual framework with wide uptake in the field, a European or national quality standard, or a quantitative synthesis (meta-analysis or systematic review of meta-analyses). Third, it had to report outcomes related to students' learning activity or achievement. Fourth, it had to be published in a peer-reviewed outlet, as a scholarly monograph, or as an official standard or legal act. Single empirical studies were excluded. Because the aim was conceptual integration rather than effect estimation, no quantitative screening protocol is reported; the selection represents the key frameworks and syntheses that recur across the literature on learning quality in higher education.

Analysis proceeded in three steps. In the first, each source was coded for its core principle, the level at which its mechanism operates and the quantitative evidence it reports. Effect sizes and correlations were recorded exactly as published. In the second step, mechanisms were grouped into five levels: system or national, institutional quality assurance, programme and course design, teaching and assessment, and student self-regulation. In the third step, the grouped mechanisms were translated into a framework in which each mechanism is paired with a responsible actor and with indicators that can be collected without new survey instruments or with instruments already validated in the literature.

For the discussion of Uzbekistan, the study used published official statistics on enrolment, institutions and teaching staff and the texts of recent legal acts on education quality. Ratios and growth rates were calculated by the author from these figures, and the calculations are shown in the text.

Results

Five levels of quality mechanisms

The coded sources fall naturally into five levels, though the boundaries between them are porous. At the system level, the main mechanisms are external quality assurance, accreditation and public information about institutional performance. ESG Part 2 and Part 3 regulate agencies, but Part 1, which sets ten standards for internal quality assurance, determines what agencies are expected to look for inside institutions [1]. The most relevant of these for learning activity is standard 1.3, "Student-centred

learning, teaching and assessment", which asks institutions to respect the diversity of students, use a variety of pedagogical methods, encourage learner autonomy while providing guidance, and apply assessment criteria that are published in advance and allow students to show the extent to which outcomes have been achieved [1].

At the institutional level, ESG standards 1.1 (policy for quality assurance), 1.6 (learning resources and student support), 1.7 (information management) and 1.9 (ongoing monitoring and periodic review of programmes) describe the machinery through which a university can know whether its students learn well [1]. Engagement theory adds that institutions shape learning not only through teaching but through how they allocate resources and organise the curriculum and support services so that students take part in activities known to promote learning [6]. Kahu's framework places institutional culture, policies and curriculum among the structural influences on engagement, alongside student background and life load [8].

The programme and course level is dominated by constructive alignment. Biggs and Tang argue that students learn what they are led to do by the combined signals of outcomes, activities and assessment; when these are aligned around verbs describing the desired performance, surface strategies become less rewarding and deep approaches more likely [4]. In this view, a course is a system whose quality depends on the coherence of its parts rather than on the excellence of any single lecture.

At the teaching and assessment level, the evidence is densest and the effects are largest. Black and Wiliam's review established that formative assessment, meaning the use of evidence about learning to adapt teaching while it is still in progress, is among the most powerful levers available to teachers [11]. Nicol and Macfarlane-Dick added that feedback works best when it clarifies what good performance is, facilitates self-assessment, delivers high-quality information, encourages dialogue, supports motivation and self-esteem, offers chances to close the gap between current and desired performance, and gives teachers information they can use to shape their teaching [12]. Freeman and colleagues found that, across 225 studies, students in active learning sections scored on average about 6% higher on examinations, equivalent to 0.47 standard deviations, while students in traditional lecturing sections were 1.5 times more likely to fail, with failure rates of 33.8% against 21.8% [13].

The student level concerns self-regulation and motivation. Zimmerman's model suggests that self-regulated learners are distinguished less by intelligence than by habits of goal setting, strategic planning, self-monitoring and self-evaluation, and that these habits can be taught [9]. The MSLQ provides a means of measuring both the motivational component (value, expectancy and test anxiety) and the strategic component (cognitive, metacognitive and resource management strategies) [10].

Quantitative evidence across mechanisms

Table 1 brings together the principal mechanisms identified in the review, their core principle and the key quantitative evidence associated with them. The table shows that the frameworks differ in the kind of evidence they offer: ESG and constructive alignment are normative and design principles whose strength comes from consensus and theoretical coherence, while active learning, feedback and self-regulation are backed by pooled effect sizes.

Table 1. Evidence-based mechanisms for ensuring the quality of students' learning activity

Mechanism	Core principle	Key evidence
Internal quality assurance	Ten standards for institutions;	European consensus standard

Mechanism	Core principle	Key evidence
(ESG 2015 Part 1)	standard 1.3 requires student-centred learning, teaching and assessment	adopted for the EHEA; assessment criteria published in advance and applied consistently
Constructive alignment	Outcomes, learning activities and assessment tasks designed as one system	Design principle; misalignment rewards surface learning, alignment encourages deep approaches
Student involvement and engagement	Learning grows with the time, energy and quality of effort students invest and with institutional conditions that invite it	Behavioural, emotional and cognitive dimensions; structural and psychosocial influences on engagement
Formative evaluation and feedback	Evidence about learning used to adapt teaching and to close the gap to the standard	Formative evaluation d=0.90; feedback d=0.73 (above the hinge point d=0.40)
Active learning	Students work on tasks in class instead of only listening	225 studies; +6% on examinations (0.47 SD); failure 33.8% vs 21.8% (1.5 times higher under lecturing)
Teacher–student relationship	Trust and responsiveness in interaction with students	d=0.72
Self-regulated learning	Cyclical forethought, performance and self-reflection; metacognitive control of study	Metacognitive strategies d=0.69; effort regulation r=0.32
Motivational beliefs	Students' confidence and goals shape effort and persistence	Performance self-efficacy r=0.59; grade goal r=0.35; academic self-efficacy r=0.31
Teaching quality and self-regulation as combined predictors	Achievement depends jointly on instructional quality and students' strategies	38 meta-analyses, 105 variables, 3330 effect sizes, about 2 million students

Source: compiled by the author from [1; 4–16]. Effect sizes d are from Hattie [14]; correlations r are from Richardson, Abraham and Bond [15]; figures for active learning are from Freeman et al. [13]; the scope of the meta-analytic review is from Schneider and Preckel [16].

Figure 1 places the influences from Hattie's synthesis that correspond most directly to the mechanisms in Table 1 against the hinge point of d=0.40. All four exceed it by a wide margin. Formative evaluation, at d=0.90, is more than twice the hinge point, and feedback, teacher–student relationships and metacognitive strategies fall in a narrow band between 0.69 and 0.73.

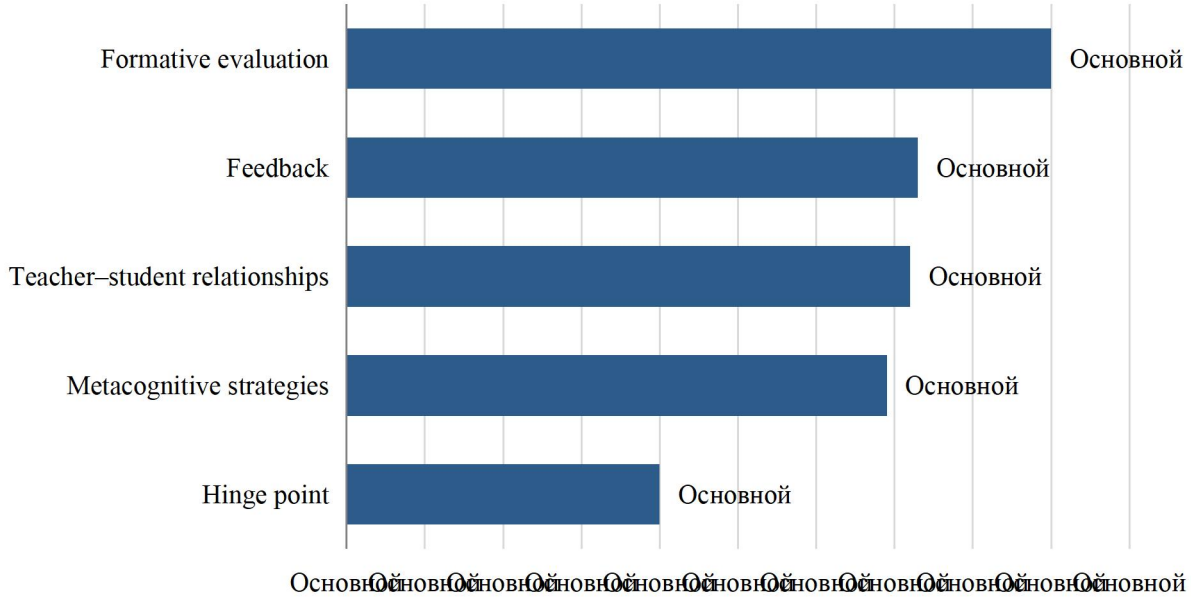


Figure 1. Effect sizes of selected influences on achievement compared with the hinge point (Cohen's d)

Source: compiled by the author from Hattie [14].

A caution is necessary here. Hattie's synthesis draws heavily on school-level research, and averaging effect sizes across meta-analyses of different designs has been criticised. The values in Figure 1 should therefore be read as an ordering of likely payoffs rather than as precise predictions for university courses.

For university students specifically, the meta-analysis by Richardson, Abraham and Bond is more directly applicable, since it covers 13 years of research and 241 data sets on correlates of grade point average in higher education [15]. Figure 2 presents five of its correlations. The strongest predictor, performance self-efficacy (r=0.59), refers to students' beliefs about the grades they can achieve, which suggests that confidence grounded in clear expectations and past success is closely tied to results. Grade goals (r=0.35) and effort regulation (r=0.32) follow, both of which describe behaviour that can be shaped through course design and feedback. Academic self-efficacy in a general sense (r=0.31) and a strategic approach to study (r=0.23) show weaker but still meaningful associations.

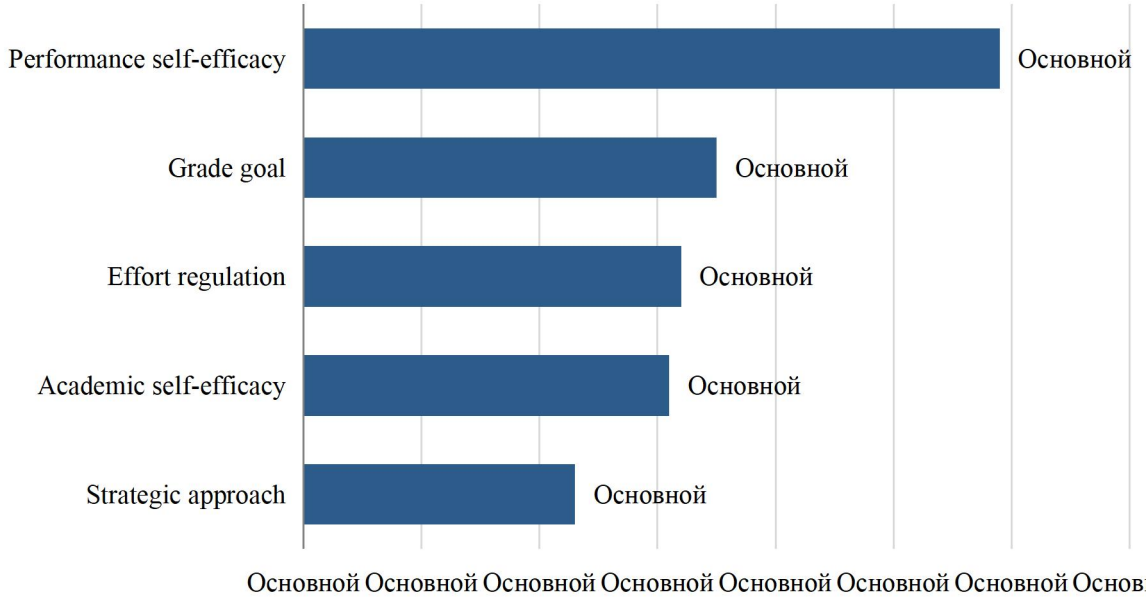


Figure 2. Correlations of selected psychological factors with university students' academic performance (r)

Source: compiled by the author from Richardson, Abraham and Bond [15].

Correlations are not effects, and a high r for self-efficacy does not prove that raising confidence will raise grades. The pattern does, however, agree with Zimmerman's model, in which self-efficacy and goal setting belong to the forethought phase that sets the course for the whole regulatory cycle [9]. It also agrees with the principle that good feedback should support motivation and self-esteem [12]. Schneider and Preckel reached a compatible conclusion at a higher level of aggregation: among the 105 variables covered by 38 meta-analyses, which together contained 3330 effect sizes from about 2 million students, the variables most strongly associated with achievement included aspects of teaching quality and students' self-regulation and strategy use [16]. The two families of mechanisms that the review identifies as strongest, therefore, are what teachers do with evidence about learning and what students do to manage their own study.

A multi-level framework for ensuring the quality of learning activity

On the basis of this synthesis, the author proposes a framework that assigns each mechanism to a level, a responsible actor and a set of indicators (Table 2). The framework is built on two principles. The first is vertical consistency: a mechanism at a higher level should create conditions for the mechanisms below it rather than duplicate them. A national agency, for example, should not prescribe teaching methods but should check whether institutions monitor the quality of teaching and assessment. The second principle is observability: each mechanism should have at least one indicator that can be collected from existing records, learning management systems or validated instruments.

Table 2. Proposed multi-level framework of mechanisms for ensuring the quality of students' learning activity

Level	Mechanism	Responsible actor	Indicators
1. System or national	External quality assurance and rating	National quality agency; ministry	Share of rating score linked to teaching and

Level	Mechanism	Responsible actor	Indicators
	that include learning process indicators, not only inputs and outputs		learning quality; presence of student survey indicators; publication of institution-level results on progression and completion
2. Institutional quality assurance	Internal quality system covering ESG standards 1.1, 1.3, 1.6, 1.7 and 1.9; closed monitoring and improvement loop	Rector's office; quality assurance unit	Share of programmes reviewed in the cycle; existence of a student engagement survey with feedback to students; first-year retention and course pass rates by programme
3. Programme and course design	Constructive alignment of outcomes, activities and assessment; planned workload in credits	Programme leader; department	Share of courses with outcomes mapped to assessment tasks; share of assessment weight tied to stated outcomes; agreement between planned and reported student workload
4. Teaching and assessment	Active learning, formative assessment and timely feedback; quality of teacher–student interaction	Teacher; teaching team	Share of class time used for active tasks; number of formative tasks with feedback before the final examination; median feedback turnaround time; student ratings of feedback usefulness
5. Student self-regulation	Development of goal setting, planning, monitoring and effort regulation; support of self-efficacy	Student; tutor or adviser; learning support service	MSLQ scale scores at entry and after the first year; use of planning tools in the learning management system; share of

Level	Mechanism	Responsible actor	Indicators
			students who act on feedback in resubmissions

Source: developed by the author on the basis of [1; 4–16].

The first two levels translate the ESG into national and institutional practice. The emphasis on process indicators at the system level matters because ratings that reward only research output, graduate employment and staffing ratios send weak signals about what happens in teaching. At the institutional level, the most important element is closing the loop: survey results and pass rates are only useful if they reach programme leaders and lead to changes that students can see.

The third and fourth levels carry the strongest evidence. Here the framework draws on constructive alignment [4], on formative assessment and feedback [11; 12] and on active learning [13]. Most of their indicators can be read from syllabi and the learning management system or estimated through structured peer observation.

The fifth level addresses the student. It does not treat self-regulation as a fixed trait but as a set of skills that can be developed through explicit instruction and through course structures that require planning and reflection [9]. The MSLQ is proposed as the main measurement tool because of its long record of use and its coverage of both motivation and strategy [10]. Engagement in its behavioural, emotional and cognitive forms [7] cuts across levels 4 and 5, which is why the framework treats it as an outcome of teaching quality and a resource for self-regulation rather than placing it at a single level.

Discussion

The review confirms a pattern that each tradition has noticed on its own but that becomes clearer when they are put together. The mechanisms with the largest and most consistent associations with learning sit close to the student: formative evaluation and feedback, active learning, the relationship between teacher and student, and the student's capacity for self-regulation. The mechanisms further from the student, such as national standards and institutional quality systems, have no comparable effect sizes, and it would be a category error to expect them. Their function is enabling. They decide whether the mechanisms close to the student are encouraged, monitored and resourced, or left to individual goodwill.

Critics of quality assurance often complain that it produces documents rather than learning, and engagement researchers stress what students actually do [6; 8]. The framework answers this by asking the higher levels to measure and reward the lower ones rather than replace them.

Implications for Uzbekistan's massified higher education

The case of Uzbekistan shows why such a structure is needed. Between 2021/22 and 2025/26 the student population grew from 808.4 to 1535 thousand [3], which corresponds to an increase of 89.9% (1535 / 808.4 = 1.899) and an average annual growth rate of about 17.4% (1.899 raised to the power 1/4 = 1.174). In 2025/26 the system comprised 215 higher education institutions, including branches [17], so the average institution enrolled roughly 7.1 thousand students (1535 / 215 = 7.14). At the beginning of 2024/25 there were 49.6 thousand teaching staff [18]; with about 1432.8 thousand students in that year, this gives approximately 28.9 students per teacher (1432.8 / 49.6 = 28.9).

These figures have direct consequences for the mechanisms in Table 2. A ratio of almost 29 students per teacher makes individual written feedback on every assignment difficult, which threatens precisely the mechanism with the highest effect size. The response suggested by the review is not to abandon feedback but to redesign it. Nicol and Macfarlane-Dick's principles point in this direction: feedback that develops self-assessment, encourages peer dialogue and requires students to act on comments can deliver much of its value without multiplying teacher hours [12]. Rubrics published in advance, as required by ESG standard 1.3 [1], allow students to judge their own work, and short in-class formative tasks give teachers information about the group as a whole.

Active learning is another mechanism whose relevance increases with group size. Freeman and colleagues found that failure rates under traditional lecturing were 33.8% compared with 21.8% under active learning [13]. As a purely illustrative calculation, in a first-year course of 100 students this difference amounts to about 12 fewer failing students. In a system where enrolment has nearly doubled in four years and many students are the first in their families to attend university, a reduction of this order would affect retention, a concern long central to research on student attrition. The calculation is not a prediction for Uzbek courses, since the original data come from science, engineering and mathematics, but it shows the scale of benefit that justifies systematic training of teachers in active methods.

The institutional and system levels are undergoing changes that create an opening for the framework. Presidential Decree PF-76 of 5 May 2025 established the National Agency for Education Quality Assurance under the Administration of the President [19]. The national rating of higher education institutions approved in February 2026 assigns up to 30 points to academic activity, including the share of staff with academic degrees, the average age of staff, the student–teacher ratio and the quality of education and conditions, and up to 30–50 points to graduates and digitalisation [20]. The rating also requires an annual nationwide survey of students, teaching staff and employers, and an institution receives no points for survey-based indicators if fewer than 20% of its students and staff take part [20]. This participation rule is an important step, because it builds the student voice into the rating and creates an incentive for institutions to engage students in quality processes.

From the standpoint of the review, two refinements would strengthen the alignment between the national rating and the evidence. The first would be to include in the survey a short set of items on feedback practice, active learning and students' self-regulation, so that the mechanisms at levels 4 and 5 of Table 2 become visible to the agency. The second would be to supplement graduate outcome indicators with indicators of progression, such as first-year retention and course pass rates, which react more quickly to changes in teaching. Both refinements are consistent with the logic of ESG Part 1, which expects institutions to collect and use information on student progression and satisfaction [1].

At the programme level, the transition to the credit-module system offers a natural vehicle for constructive alignment. When workload is expressed in credits, the question of what students are expected to do during their independent study hours becomes explicit, and this is the space in which self-regulation is either developed or neglected. Institutions could use the review's findings to require that every course specify formative tasks, the feedback students will receive on them and the strategies they are expected to use for independent work.

Limitations

The review has several limitations. It relies on published syntheses rather than on primary studies and therefore inherits their biases, including the overrepresentation of research from North America, Western Europe and Australia. Hattie's synthesis combines meta-analyses of differing quality and draws largely on schools, which limits the precision of its values for higher education [14]. Correlations from Richardson, Abraham and Bond do not establish causality [15]. The integrative design, chosen to connect frameworks across levels, does not provide a reproducible count of screened records, and other reviewers could have weighted the sources differently. Finally, the proposed framework has not yet been tested empirically in Uzbek institutions. Its indicators need to be piloted for feasibility and validity, and the MSLQ requires adaptation and psychometric checking in Uzbek before it can be used for comparison across institutions. A pilot study in several universities with different profiles is planned as the next stage of this research.

Conclusion

1) The integrative synthesis shows that the mechanisms most strongly associated with the quality of university students' learning activity operate close to the learner: formative evaluation (d=0.90), feedback (d=0.73), teacher–student relationships (d=0.72), metacognitive strategies (d=0.69) and active learning, which in 225 studies reduced failure rates from 33.8% to 21.8%. Among psychological factors, performance self-efficacy (r=0.59), grade goals (r=0.35) and effort regulation (r=0.32) show the strongest links with achievement.

2) Mechanisms can be organised into five levels: system or national, institutional quality assurance, programme and course design, teaching and assessment, and student self-regulation. The proposed framework assigns each mechanism a responsible actor and observable indicators, with the higher levels acting as enabling conditions that measure and reward the mechanisms at the lower levels rather than duplicating them.

3) For Uzbekistan, where enrolment grew by 89.9% in four years to 1535 thousand students and there are about 28.9 students per teacher, the framework suggests redesigning feedback around self-assessment and peer dialogue, extending active learning, and adding indicators of feedback practice, engagement, self-regulation and progression to the national rating administered by the new National Agency for Education Quality Assurance. The framework is to be tested in a pilot study in Uzbek universities.

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