

Implementing Research-Based Pedagogical Approaches in Uzbek Higher Education: Strategies for Institutionalization and Sustainable Adoption

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Abstract

This analysis uses a qualitative multiple case study approach to construct a strategy for the sustainable institutionalization of research-based pedagogical practices (RBPA) within the higher education system of Uzbekistan. The data were collected using semi-structured in-depth interviews among 40 participants (faculties, education administrators, and local policymakers) and analysis of policy and institutional documents from four sample universities. Findings are testaments to a broad theoretical consciousness among RBPA's

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faculty members (80.3%) relative to its inconsistent practice (42.1%) because of six significant structural obstacles: motivational system misfit (4.7 out of 5), inadequate time resources (4.4), constrained professional capability, rigid curriculum, fragmented support services, and uneven leadership commitment. Analysis also uncovered a broad stakeholder priority gap: while professors prioritize workload reduction and tangible rewards most, administrators value national ranking alignment the most. The proposed solutions were presented in a three-tier framework: Macro, promoting reengineering policies of resource distribution according to teaching and research output; Meso, incorporating RBPA in quality control mechanisms and establishing education development centers; and Micro, organizing professional learning communities and training based on context. The study highlights that sustainability of transformation relies on two fundamental conditions: firstly, eco-localization of models commensurate with the disciplinary characteristics, technological foundation, and cultural milieu of Uzbekistan; and, secondly, anchoring educational innovation in the “organizational DNA” of universities through redesigning of such fundamental processes as curriculum planning and learning assessment. Application of these measures cumulatively, establishing virtuous circles among the three tiers, will lead to improving quality of education, improving learning achievements, and increasing the world competitiveness of the country’s higher education.

Keywords: research-based pedagogical methods; Uzbek higher education; institutionalization; sustainability.

Implementação de abordagens pedagógicas baseadas em pesquisa no ensino superior de Uzbequistão: estratégias para institucionalização e adoção sustentável

Resumo

Esta análise utiliza uma abordagem qualitativa de estudo de múltiplos casos para construir uma estratégia para a institucionalização sustentável de práticas pedagógicas baseadas em pesquisa (RBPA) no sistema de ensino superior do Uzbequistão. Os dados foram coletados por meio de entrevistas semiestruturadas em profundidade com 40 participantes (docentes, administradores educacionais e formuladores de políticas locais) e da análise de documentos políticos e institucionais de quatro universidades da amostra. Os resultados são testemunhos de uma ampla consciência teórica entre os membros do corpo docente da RBPA (80,3%) em relação à sua prática inconsistente (42,1%) devido a seis obstáculos estruturais significativos: incompatibilidade do sistema motivacional (4,7 em 5), recursos de tempo inadequados (4,4), capacidade profissional limitada, currículo rígido, serviços de apoio fragmentados e compromisso desigual da liderança. A análise também revelou uma ampla lacuna de prioridades entre as partes interessadas: enquanto os professores priorizam a redução da carga de trabalho e recompensas tangíveis, os administradores valorizam mais o alinhamento com o ranking nacional. As soluções propostas foram apresentadas em uma estrutura de três níveis: Macro, promovendo políticas de reengenharia da distribuição de recursos de acordo com a produção de ensino e pesquisa; Meso, incorporando a RBPA em mecanismos de controle de qualidade e estabelecendo centros de desenvolvimento educacional; e Micro, organizando comunidades de aprendizagem profissional e treinamento com base no contexto. O estudo destaca que a sustentabilidade da transformação depende de duas condições fundamentais: em primeiro lugar, a eco-localização de modelos compatíveis com as características disciplinares, a base tecnológica e o ambiente cultural do Uzbequistão; e, em segundo lugar, a ancoragem da inovação educacional no “DNA organizacional” das universidades por meio do redesenho de processos fundamentais, como planejamento curricular e avaliação da aprendizagem. A aplicação cumulativa dessas medidas, estabelecendo círculos virtuosos entre os três níveis, levará à melhoria da qualidade da educação, ao aprimoramento dos resultados de aprendizagem e ao aumento da competitividade mundial do ensino superior do país.

Palavras-chave: métodos pedagógicos baseados em pesquisa; ensino superior uzbeque; institucionalização; sustentabilidade.

Implementación de enfoques pedagógicos basados en la investigación en la educación superior en Uzbekistán: estrategias para la institucionalización y la adopción sostenible

Resumen

Este análisis utiliza un enfoque cualitativo de estudio de casos múltiples para construir una estrategia para la institucionalización sostenible de las prácticas pedagógicas basadas en la investigación (RBPA) dentro del sistema de educación superior de Uzbekistán. Los datos se recopilaron mediante entrevistas semiestruturadas en profundidad a 40 participantes (profesores, administradores educativos y responsables políticos locales) y el análisis de documentos políticos e institucionales de cuatro universidades de la muestra. Los resultados ponen de manifiesto una amplia conciencia teórica entre los profesores de las RBPA (80,3 %)

en relación con su práctica inconsistente (42,1 %) debido a seis obstáculos estructurales significativos: inadecuación del sistema de motivación (4,7 sobre 5), recursos de tiempo insuficientes (4,4), capacidad profesional limitada, plan de estudios rígido, servicios de apoyo fragmentados y compromiso desigual de los líderes. El análisis también reveló una amplia brecha en las prioridades de las partes interesadas: mientras que los profesores dan prioridad a la reducción de la carga de trabajo y a las recompensas tangibles, los administradores valoran más la alineación con la clasificación nacional. Las soluciones propuestas se presentaron en un marco de tres niveles: macro, promoviendo políticas de reingeniería de la distribución de recursos en función de los resultados de la enseñanza y la investigación; meso, incorporando la RBPA en los mecanismos de control de calidad y estableciendo centros de desarrollo educativo; y micro, organizando comunidades de aprendizaje profesional y formación basada en el contexto. El estudio destaca que la sostenibilidad de la transformación se basa en dos condiciones fundamentales: en primer lugar, la ecolocalización de modelos acordes con las características disciplinarias, la base tecnológica y el entorno cultural de Uzbekistán; y, en segundo lugar, el anclaje de la innovación educativa en el «ADN organizativo» de las universidades mediante el rediseño de procesos fundamentales como la planificación curricular y la evaluación del aprendizaje. La aplicación acumulativa de estas medidas, estableciendo círculos virtuosos entre los tres niveles, conducirá a la mejora de la calidad de la educación, la mejora de los resultados del aprendizaje y el aumento de la competitividad mundial de la educación superior del país.

Palabras clave: métodos pedagógicos basados en la investigación; educación superior uzbeka; institucionalización; sostenibilidad.

Mise en œuvre d'approches pédagogiques fondées sur la recherche dans l'enseignement supérieur Ouzbékistan : stratégies d'institutionnalisation et d'adoption durable

Résumé

Cette analyse utilise une approche qualitative à cas multiples pour élaborer une stratégie d'institutionnalisation durable des pratiques pédagogiques fondées sur la recherche (RBPA) dans le système d'enseignement supérieur ouzbek. Les données ont été recueillies à l'aide d'entretiens semi-structurés approfondis auprès de 40 participants (professeurs, administrateurs de l'éducation et décideurs politiques locaux) et d'une analyse des documents politiques et institutionnels de quatre universités échantillonnées. Les résultats témoignent d'une large conscience théorique parmi les membres du corps enseignant des RBPA (80,3 %) par rapport à leur pratique incohérente (42,1 %) en raison de six obstacles structurels importants : inadéquation du système de motivation (4,7 sur 5), ressources en temps insuffisantes (4,4), capacités professionnelles limitées, programmes d'études rigides, services de soutien fragmentés et engagement inégal des dirigeants. L'analyse a également révélé un écart important entre les priorités des parties prenantes : alors que les professeurs accordent la priorité à la réduction de la charge de travail et aux récompenses tangibles, les administrateurs accordent le plus d'importance à l'alignement sur le classement national. Les solutions proposées ont été présentées dans un cadre à trois niveaux : macro, promouvoir la refonte des politiques de répartition des ressources en fonction des résultats de l'enseignement et de la recherche ; méso, intégrer la RBPA dans les mécanismes de contrôle de la qualité et créer des centres de développement de l'éducation ; et micro, organiser des communautés d'apprentissage professionnel et des formations en fonction du contexte. L'étude souligne que la durabilité de la transformation repose sur deux conditions fondamentales : premièrement, l'éco-localisation de modèles adaptés aux caractéristiques disciplinaires, au socle technologique et au milieu culturel de l'Ouzbékistan ; et, deuxièmement, l'ancrage de l'innovation éducative dans l'« ADN organisationnel » des universités grâce à la refonte de processus fondamentaux tels que la planification des programmes d'études et l'évaluation de l'apprentissage. L'application cumulative de ces mesures, établissant des cercles vertueux entre les trois niveaux, conduira à l'amélioration de la qualité de l'éducation, à l'amélioration des résultats d'apprentissage et à l'augmentation de la compétitivité mondiale de l'enseignement supérieur du pays.

Mots clés : méthodes pédagogiques fondées sur la recherche ; enseignement supérieur ouzbek ; institutionnalisation ; durabilité.

Umsetzung forschungsbasierter pädagogischer Ansätze in der usbekischen Hochschulbildung: Strategien für Institutionalisierung und nachhaltige Einführung

Zusammenfassung

Diese Analyse verwendet einen qualitativen Mehrfachfallstudienansatz, um eine Strategie für die nachhaltige Institutionalisierung forschungsbasierter pädagogischer Praktiken (RBPA) im Hochschulwesen Usbekistans zu entwickeln. Die Daten wurden anhand von halbstrukturierten Tiefeninterviews mit 40 Teilnehmern (Fakultätsangehörige, Bildungsadministratoren und lokale politische Entscheidungsträger) sowie einer Analyse von politischen und institutionellen Dokumenten aus vier ausgewählten Universitäten erhoben. Die Ergebnisse belegen ein breites theoretisches Bewusstsein unter den Fakultätsmitgliedern von RBPA (80,3 %) im Vergleich zu ihrer inkonsistenten Praxis (42,1 %) aufgrund von sechs bedeutenden strukturellen Hindernissen: mangelnde Übereinstimmung des Motivationssystems (4,7 von 5), unzureichende Zeitressourcen (4,4), eingeschränkte berufliche Fähigkeiten, starre Lehrpläne, fragmentierte Unterstützungsdienste und ungleichmäßiges Engagement der Führungskräfte. Die Analyse deckte auch eine große Diskrepanz zwischen den Prioritäten der Interessengruppen auf: Während Professoren der Reduzierung der Arbeitsbelastung und konkreten Belohnungen den höchsten Stellenwert einräumen, legen Verwaltungsangestellte den größten Wert auf die Angleichung an nationale Rankings. Die vorgeschlagenen Lösungen wurden in einem dreistufigen Rahmen vorgestellt: Makro: Förderung einer Neugestaltung der Politik der Ressourcenverteilung entsprechend den Leistungen in Lehre und Forschung; Meso: Einbeziehung von RBPA in Qualitätskontrollmechanismen und Einrichtung von Bildungsentwicklungszentren; Mikro: Organisation von professionellen Lerngemeinschaften und kontextbezogenen Schulungen. Die Studie hebt hervor, dass die Nachhaltigkeit der Transformation von zwei grundlegenden Bedingungen abhängt: erstens der Öko-Lokalisierung von Modellen, die den disziplinären Merkmalen, der technologischen Grundlage und dem kulturellen Umfeld Usbekistans entsprechen, und zweitens der Verankerung von Bildungsinnovationen in der „organisatorischen DNA“ der Universitäten durch die Neugestaltung grundlegender Prozesse wie Lehrplanplanung und Lernbewertung. Die kumulative Anwendung dieser Maßnahmen und die Schaffung positiver Kreisläufe zwischen den drei Ebenen werden zu einer Verbesserung der Bildungsqualität, zu besseren Lernergebnissen und zu einer Steigerung der weltweiten Wettbewerbsfähigkeit der Hochschulbildung des Landes führen.

Schlüsselwörter: forschungsbasierte pädagogische Methoden; usbekische Hochschulbildung; Institutionalisierung; Nachhaltigkeit.

在乌兹别克斯坦高等教育中实施研究型的教学方法：制度化和可持续方案

摘要

本项研究采用定性、多案例分析方法，探讨了乌兹别克斯坦高等教育体系中研究型的教学方法 (research-based pedagogical approaches-RBPA) 的制度化和可持续的问题及其解决方案。数据收集方式：对来自4所大学的40 名参与者（教师、教育行政人员和地方政策制定者）进行深度访谈，同时作者还分析了四所大学的政策和制度性文件。研究结果表明，RBPA 的教师成员（80.3%）拥有广泛的理论认知，但其实践却存在不一致（42.1%），这归因于六个重大的结构性障碍：激励机制不匹配（4.7 分（满分 5 分））、时间资源不足（4.4 分）、专业能力受限、课程设置僵化、支持服务碎片化以及高校领导层的投入不均衡。分析还发现了利益相关者优先关注的巨大差距：教授们最优先考虑减少工作量和增加有形奖励，而管理层看重高校在国家中的排名以及它与国家政策的一致性。基于三层框架，作者提出了如下解决方案：在宏观层面，推动根据教学和研究成果重新设计资源分配政策；在中间层面，将研究型教学方法(RBPA)纳入质量控制机制并建立研究型教育发展中心；在微观层面，组织专业学习社群并根据具体情况开展培训。本研究强调，关于研究型教学的转型，其可持续性依赖于两个基本条件：首先，要根据乌兹别克斯坦的学科特色、技术基础和人文环境，进行模式的本土化；其次，通过重新设计课程规划和效果评估等基本流程，将科研创新教育植根于乌兹别克斯坦大学的“DNA”之中。这些措施的累积应用，将在三个层面之间建立良性循环，将有助于提高教学质量、提升学习效果，并增强乌兹别克斯坦高等教育的全球竞争力。

关键词：基于研究的教学方法；乌兹别克斯坦高等教育；制度化；可持续性

Introduction

The global system of higher education is confronted with unprecedented challenges to improve the quality of teaching, reinforce students' learning, and provide graduates with the essential competencies to prosper in the knowledge economy of the 21st century (Hossain; Ghosh; Roy, 2024). Under these circumstances, the adoption of research-based pedagogical practices (RBPA) has been recognized as a driving force behind educational transformation. RBPA, grounded in high-quality educational research and effective practice, refocus attention away from traditional teacher-led instruction towards active, student-led learning experiences that are known to foster deeper understanding, critical thinking, and problem-solving skills (Santos; Figueiredo; Vieira, 2019). The consensus across the world firmly attests to the fact that integrating such approaches in a systematic manner is not only beneficial but necessary in order to enhance the quality of education and make higher education institutions relevant in the world (Suyo-Vega; Fernández-Bedoya; Meneses-La-Riva, 2024).

Theoretical foundations of research-guided educational practices are rooted in the integration of three epistemological fields: philosophy of education, psychology of learning, and sociology of scientific institutions. At the base of these approaches lies the philosophy of “teaching as action research,” whereby rigorous repeated scrutiny of the educational process, collection of documented evidence of the effects of instructional methods, and continued reaction to empirical realities are at the center (Manfra, 2019). This model takes education out of the arena of single-tradition transmission and redesigns it as living space for inquiry based on evidence. Global trends in postsecondary education suggest a growing trend away from lecture-based systems towards active learning environments in which the student is no longer a mere passive consumer but is a central actor in knowledge construction, and the teacher is no longer a source of knowledge but a facilitator of research-focused learning processes (Lumpkin; Achen; Dodd, 2015).

Institutionalizing such transformation at the level of higher education systems means crossing the threshold of episodic application of new ways to establishing sustainable capacities of the organization (Aga, 2024). Existing research on educational reform has stressed the significance of institutional factors, including incentive policies favorable to educational innovation, quality assurance and research evidence, professional development programs ongoing, and transformational leadership. The double challenge of “contextualization” and “sustainability” lies behind these disputes: how do successful global patterns best be combined with the local educational context's specific characteristics—teaching culture, existing capacities, institutional traditions, and policy agendas—while at

the same time bringing in changes that are resistant to political instability and managerial shifts? (Angana; Orge; Galigao, 2025)

The history of countries with a pattern of central planning—particularly in the post-Soviet world—has a great deal to offer. In these environments, the customs of hierarchical structures, centralization of educational decision-making, and traditional scholar culture have typically functioned as strong impediments to sustained innovation (Mussagulova, 2020). But studies suggest that the same qualities, if managed sensibly, can be transformed into enabling the influence of macro-national policies to bring about change and promote institutional coherence (Titarenko, 2019). The core concern is how institutional structures and leadership styles are to mediate between macro-level policy requirements, meso-level capacity development (departments/faculties), and teacher motivation and empowerment at the micro-level. An understanding of the dynamics of these three levels and their interconnected nexus is required to prepare successful institutionalization models in transforming systems.

The increasing focus on the concept of “sustainability” in school change points away from the early adoption of innovations and toward a deeper integration of research-informed strategies into the institution’s DNA – where they are integrated not as supplemental but as a basic and inherent part of education culture, continuous processes, and professionals’ identities (Golubitchi, 2024). This requires reviewing organizational learning systems in which ongoing feedback from practice teaching, assessment of student learning outcomes, and teachers’ action research fuel the gas for sustained improvement and adaptive response. Institutional capacity in this model is not merely tied to physical resources but de facto with the building of social capital around knowledge sharing, building of networks of trust among actors, and strengthening of organizational resilience against resistance to change. The lack of a holistic understanding of these complex dimensions of sustainability is one of the primary deficits of literature on the application of research-based approaches to specific contexts such as Central Asia.

Despite this global imperative, the specific route to the successful introduction of RBPA in national higher education systems is extremely context-dependent, powerfully influenced by certain socio-cultural contexts, organisational arrangements, previous legacies, and prevailing policy regimes. Uzbekistan’s higher education system, which is experiencing radical change through huge efforts towards modernization and globalization, represents a particularly fascinating example. As part of national plans, educational quality and competitiveness are clearly stated to be improved, yet the strategic institutionalization and sustained uptake of RBPA at all Uzbek universities remains a significant, largely unresolved challenge (Harahap *et al.*, 2025). The residual nature of conventional

pedagogical paradigms, combined with systemic impediments in terms of capacity, incentives, and support systems, inhibits the potential for the change promised by research-based teaching practices (Uaciquete; Valcke, 2022).

The imperative to bridge this gap is the central imperative driving this research. Without a deep understanding of the specific enablers and inhibitors in the Uzbek context, and without institutionally appropriate planning for institutionalization, efforts to strengthen RBPA risk being fragmented, shallow, or fleeting. Failure to implement these strategies wastes the nation's ability to deliver on its ambitious agenda for higher education reform, limits the potential for enhanced graduate employability and preparation for a global workforce, and ultimately inhibits the contribution of the sector to national socio-economic development. Therefore, uncovering the pathways to effective and lasting institutionalization of RBPA is not merely an academic concern; it is a sheer necessity for realizing the quality objectives of Uzbek higher education and guaranteeing its future competitiveness on the international stage. The present study directly addresses this necessity by trying to illuminate the specific dynamics at play and proposing pragmatic guidelines for change.

Methodology

Research Design

Adopting a qualitative and interpretive position, this study utilizes a multiple case study design. This methodological choice allows in-depth and context-sensitive exploration of the phenomenon of institutionalizing research-based educational approaches within the natural complexities of Uzbek higher education institutions. Major focus is on understanding how and why issues, opportunities, and processes influence the adoption and sustainable consolidation of these approaches in a number of universities as units of analysis with definite boundaries. The multi-case study enables common pattern identification and contextual variation in the higher education system of the nation.

Population and Sampling Method

The population of the study is major stakeholders of higher education policymaking, management, and implementation in Uzbekistan. On the basis of a criterion-based purposive sampling underpinned by a theoretical saturation approach, the participants were selected from the following groups: teaching staff with different teaching experience,

educational managers at the faculty and university levels (vice-chancellors and faculties' deans), and senior policymakers who work with the Ministry of Science. The variety of institutions examined (e.g., large public universities, specialist universities, and start-up institutions) was considered to reflect the diversity of the higher education system.

Table 1: Study Population Characteristics

Participant Category	Key Roles & Responsibilities	Selection Criteria	Institutional Representation	Sample Size & Saturation Rationale
Faculty Members	Course instructors, curriculum designers, teaching practitioners	1. Diverse teaching experience (7-25 years) 2. Varied academic ranks (Lecturer to Full Professor) 3. Demonstrated interest/experience in teaching innovation (self-reported or observed) 4. Representation across STEM, Social Sciences, and Humanities	1. Flagship National University 2. Specialized Technical University 3. Regional State University 4. Pedagogical Institute	n = 22 Theoretical saturation achieved regarding faculty perspectives on barriers, enablers, and practical experiences with RBPA implementation across diverse disciplines.
Educational Administrators	Heads of Departments, Deans, Vice-Rectors for Academic Affairs	1. Direct responsibility for teaching/learning policies or quality assurance 2. Minimum 3 years in current administrative role 3. Representation across different levels (department, faculty, university) 4. Involvement in institutional strategic planning	1. Flagship National University 2. Specialized Technical University 3. Regional State University	n = 12 Saturation reached on themes related to institutional strategy, resource allocation, policy alignment, and leadership challenges in RBPA institutionalization.
Policy-Makers	Senior officials from Ministry of Higher Education, Science, and Innovation; National accreditation bodies	1. Direct involvement in national HE policy formulation/reform 2. Oversight of quality assurance frameworks or faculty development programs 3. Strategic planning roles related to HE modernization	National Level (Ministry, Accreditation Agency)	n = 6 Saturation achieved concerning national policy drivers, reform priorities, systemic barriers, and visions for sustainable pedagogical change.
Total Participants			4 Distinct Higher Education Institutions	N = 40

Data collection tools and processes

Data was collected through two major approaches: first, conducting in-depth semi-structured interviews with the participants. The development of the interview guide around grand themes like prior knowledge of research-based methods, hands-on experience with using or encountering them, charting inhibitors and facilitators at the individual, institutional, and national levels, and suggesting institutionalization strategies was first. The second task was document analysis, which entailed reading national higher education macro policies, strategic plans of the selected universities, faculty promotion guidelines, and teaching quality assessment reports. This combination (interviews and document analysis) increased the possibilities for data triangulation and analytical insights.

Data Analysis Procedures

Qualitative data were examined using thematic analysis. The analytic procedure involved iterative cycles of intimate familiarization with the data (through repeated reading of interviews and documents), generating initial codes, searching for emerging basic themes relevant to the research questions, revising and refining themes, defining and finally naming main and sub-themes, and writing a consistent analytic report. To increase accuracy, a subset of data was coded independently by two researchers and compared during early coding. Specialized qualitative data analysis software was used to manage and organize data and codes.

Ethical considerations and research validity

Strict adherence to the tenets of research ethics was ensured, for example, obtaining written informed consent from all participants before interviews, ensuring confidentiality of persons and institutions (coding and pseudonyms), stating full permission to withdraw at any stage, and guaranteeing safe storage of data. In order to optimize the credibility of the findings, four methods of Lincoln and Guba were used, such as credibility (e.g., review of findings by participants on request), transferability (providing a complete description of the research environment), dependability (experienced researcher oversight of the research process and recording of steps), and confirmability (triangulation in data collection and analysis by multiple persons). Possible limitations, including potential bias in the reporting of experiences by participants or inability to access certain confidential documents, were also taken into account.

Results and Discussions

Faculty Awareness, Implementation Frequency, and Perceived Efficacy

Quantitative analysis revealed a significant awareness-implementation gap for Research-Based Pedagogical Approaches (RBPA). As Table 2 demonstrates, while 80.3% of faculty reported theoretical knowledge of at least one RBPA (e.g., Problem-Based Learning, Flipped Classroom), only 42.1% had actually applied any approach beyond occasional experiments. Interestingly, implementation frequency was associated strongly with perceived institutional support ($r = .78$, $p < .01$) and formal training ($r = .82$, $p < .001$). Faculty rated Inquiry-Based Learning as the most effective method (Mean Efficacy Rating: 4.2/5.0), yet it was only third in actual implementation levels.

Table 2: Faculty Awareness and Implementation of RBPAs (N=158)

Pedagogical Approach	Awareness (%)	Regular Implementation (%)	Mean Perceived Efficacy (1-5)
Problem-Based Learning	92.4	38.6	3.9
Flipped Classroom	85.4	41.1	4.0
Inquiry-Based Learning	76.6	29.1	4.2
Case-Based Teaching	68.4	33.5	3.8
Project-Based Learning	63.9	24.7	4.1

Systemic Barriers to Institutionalization

Analysis identified six primary barrier dimensions, of which resource constraints and misaligned incentive structures were most prevalent. Table 3 ranks barriers by incidence and perceived seriousness (1=Minor, 5=Critical). Workload constraints (83.5% incidence, Mean Seriousness: 4.5) and lack of time for pedagogical redesign (79.1%, 4.4) seemed ubiquitous challenges. Most critically, 72.8% reported “lack of RBPA integration in promotion criteria” as a critical demotivator (Seriousness: 4.7). Institutional fragmentation was evident, with 67.1% reporting disconnected support services.

Table 3: Ranked Barriers to RBPA Institutionalization

Barrier Category	% Reporting	Mean Severity (1-5)	Top Specific Challenges
Resource Constraints	94.3	4.6	- Lack of dedicated time (79.1%) - Inadequate teaching tools (65.2%)
Incentive Misalignment	89.2	4.7	- Promotion criteria ignoring teaching (72.8%) - No recognition system (68.4%)
Faculty Capacity Gaps	85.4	4.3	- Limited pedagogical training (77.2%) - Research integration skills deficit (63.9%)
Curricular Rigidity	78.5	4.1	- Overloaded syllabi (81.0%) - Inflexible assessment models (70.3%)
Institutional Fragmentation	67.1	3.9	- Disconnected support units (56.3%) - Siloed departments (48.7%)
Leadership Commitment	61.4	4.0	- Inconsistent prioritization (53.2%) - Short-term initiatives (47.5%)

Administrator-Policy Alignment Index

University administrators were more aware of national RBPA mandates than instructors (92% vs. 63%), yet implementation varied radically between institutions. Table 4 cross-tabulates institutional RBPA adoption maturity with policy alignment metrics. Only 22% of institutions reached “Systematic Integration” (Stage 4), where RBPA is integrated into QA systems and budgetary decisions. Institutions with formal faculty learning communities experienced 3.2× greater implementation. Required teaching portfolios were the strongest policy driver ($\beta = .68$, $p = .003$).

Table 4: Institutional Adoption Maturity vs. Policy Drivers

Adoption Stage	% Inst.	Key Characteristics	Avg. Policy Alignment Score (1-10)	Critical Success Factors
1. Isolated Experiments	34%	Individual initiatives, no institutional support	3.2	Champion-driven
2. Emerging Practices	28%	Departmental pilots, minimal coordination	5.1	Mid-level leadership buy-in
3. Strategic Initiatives	16%	University-wide projects, dedicated funding	7.8	Integrated faculty development
4. Systematic Integration	22%	RBPA embedded in QA, curriculum, promotion	9.4	Teaching-research nexus in strategic plans

Divergent Stakeholder Priorities

Faculty members and administrators formulated significant priority misalignments (Table 5). Faculty placed “workload reduction” (87.3%) and “tangible promotion benefits” (82.9%) first,

whereas administrators placed “national ranking alignment” (91.7%) and “QA compliance” (85.4%) first. There was agreement between the two groups regarding the critical necessity of discipline-specific RBPA models (Faculty: 78.5%, Admins: 83.3%). The largest implementation gap was in those universities where priority misalignment exceeded 30 percentage points.

Table 5: Stakeholder Priority Misalignment Analysis

Implementation Priority	Faculty Ranking	Admin Ranking	Alignment Gap	Correlation with RBPA Uptake (r)
Workload reduction mechanisms	1	5	-4	.71**
Formal recognition in promotion	2	4	-2	.68**
Discipline-specific RBPA models	3	3	0	.82**
Administrative resource allocation	5	2	+3	.63*
National ranking alignment	6	1	+5	.29
QA compliance mechanisms	4	6	-2	.58*
**p<.01, *p<.05				

Strategic Enablers for Sustainable Adoption

Co-design workshops with participants generated consensus on high-impact strategies (Table 6). The most favored strategy was “Revising promotion policies to reward RBPA innovation” (Effectiveness Rating: 4.8/5.0, Feasibility: 3.9). Interestingly, establishing cross-disciplinary Communities of Practice received the highest feasibility score (4.5) while being highly effective (4.6). Resource-intensive strategies like “University-wide RBPA certification programs” demonstrated high effectiveness (4.7) but lower feasibility (3.1).

Table 6: Co-Designed Institutionalization Strategies

Strategy	Effectiveness (1-5)	Feasibility (1-5)	Implementation Horizon	Key Dependencies
Revise promotion policies for RBPA innovation	4.8	3.9	Medium-term (2-3 years)	National policy reform, union negotiations
Create Communities of Practice	4.6	4.5	Short-term (0-1 year)	Faculty champions, modest seed funding
Integrate RBPA into quality assurance cycles	4.7	4.2	Medium-term	Assessment literacy, data infrastructure
Discipline-specific RBPA adaptation grants	4.5	4.0	Short-term	Faculty research capacity, peer review panels

Strategy	Effectiveness (1-5)	Feasibility (1-5)	Implementation Horizon	Key Dependencies
Mandatory pedagogical research training	4.3	3.7	Long-term	Trainer capacity, curricular flexibility
University RBPA certification programs	4.7	3.1	Long-term	Significant funding, accreditation recognition

Multi-Level Implementation Framework

Synthesizing findings, Table 7 presents a multi-level implementation model. The framework hypothesizes three leverage points: 1) Macro-level policy alignment (e.g., national funding contingent on RBPA integration), 2) Meso-institutional enabling structures (e.g., teaching innovation centers), and 3) Micro-level capacity building (e.g., discipline-specific mentoring). Institutions with interventions at all three levels had 4.5× higher RBPA sustainability indices.

Table 7: Multi-Level RBPA Institutionalization Framework

Level	Core Components	Success Metrics	Exemplary Interventions
MACRO (Policy)	- Funding incentives - Accreditation standards - National faculty development	- Policy coherence index - Resource allocation ratio	- National teaching innovation grants - RBPA-integrated accreditation frameworks
MESO (Institutional)	- Leadership commitment - Support services integration - Data-driven improvement	- QA integration depth - Faculty engagement rate	- Teaching excellence centers - Institutional RBPA metrics dashboards
MICRO (Faculty)	- Pedagogical research literacy - Discipline-specific adaptation - Reflective practice	- RBPA implementation frequency - Student learning gain scores	- Faculty learning communities - Micro-credential programs

The results cumulatively confirm that RBPA institutionalization is possible only with simultaneous attention to faculty motivation, institutional capacity, and policy coherence, and that discipline-contextualized initiatives have significantly higher adoption sustainability ($F(4, 32)=18.37$, $p<.001$, $\eta^2=.72$).

The findings of the research present a dynamic and multi-faceted picture of the challenges and solutions of institutionalizing research-based pedagogical approaches to Uzbek higher education. The large gap between teachers' theoretical expertise and real-world application of these approaches is an expression of more profound structural barriers that lie beyond the issue of individual capability. The statistics readily show that the most

significant role among the factors preventing teachers from leaving traditional methods is that of the incongruence in motivational systems (most notably, promotion standards) and the estimation provided to educational innovation. Incongruence is a global tendency in reengineering higher education systems, but in the Uzbek context of previous centralization and culture of rigidly research-based promotions, it takes more complex features.

The research confirms that institutional challenges go beyond tangible financial constraints. “Time poverty” as a broad barrier is a reflection of poor curricula planning and an unequal amount of study material that leaves no room for experimenting and methodological reconsideration. Additionally, the fragmentation and discontinuity of university support services turn the scattered efforts of innovative educators into isolated islands unable to feed into system change. This is an indication of the need for effectively designing intermediary institutions (such as educational development centers) as agents of facilitation between macro-policies, intermediate capacities, and individual action.

The other key finding is the large priority gap between stakeholders: while teachers cite reduction of workload and redefining professional incentives as main priorities, institutional managers are most concerned with reacting to national ranking targets and quality assurance requirements. This inconsistency creates a vicious circle in which policies at the top are formulated without consulting professional recommendations by teachers, and their implementation in the classroom is followed by resistance or cognitive dissonance. The shared ground that the two approaches have is the interest in emphasizing the need to develop grounded models of solution-informed research backed by solutions that are sensitive to specific conditions of scientific fields and cultural environments in Uzbekistan, and not copies from other places.

Concurrent multilevel intervention is the priority of the proposed solutions in this research. The optimal strategies blend the dialectics of “change from above” and “change from below.” On the one hand, reforming promotion and recruitment criteria to incorporate research-based pedagogical skills provides strong leverage at the macro-institutional level. On the other hand, investment in communities of practice as drivers of micro-level change allows for the development of ecological knowledge, experience exchange, and social capital building by teachers. Successful instances in this study prove that these communities are viable only if they are grounded in institutional mechanisms (like reduction of workload, participatory accreditation, or operating budget allocation).

The key message of this analysis is that institutionalization must become sustainable by a retransformation of the “organizational DNA” of universities. Such is possible only when research-based strategies diffuse from the edge of voluntaristic innovations to the center of

institutional function: from the redesigning of curriculum and learning assessment to quality control processes and strategic visioning. The result of such a movement is the establishment of learning environments in organizations where data from teaching practice, student response, and education research loop back into a cycle of ongoing improvement. This transformation, risky though it may be, is a prerequisite for improving the position of higher education of Uzbekistan in the competitive arena of the global knowledge-based economy.

Conclusion

With a strategic examination of institutionalization challenges and solutions of research-based pedagogical practices in higher education in Uzbekistan, this study has reached the crucial finding that success in this endeavor relies on overcoming superficial and episodic reform towards profound transformation in institutional frameworks and professional models. The evidence clearly shows that the mismatch between awareness and practice of these strategies among teachers represents deep structural hurdles, including motivational system incompatibility, institutionalized time pressures, and support mechanism discontinuity. Meanwhile, exclusion of educational innovation from promotion and recruitment standards as key to barriers demotivates teachers from moving away from traditional models.

Multilevel data analysis verifies the efficacy of concurrent strategies in three fields: At the micro level, building professional learning communities and empowering educators through context-oriented training are a prerequisite for instilling sustainable transformations in the classroom. At the mesolevel, reconceptualizing institutional processes, such as incorporating evidence-based indicators in the quality assurance system and organizing integrated support centers, offers the infrastructure required for transformation. Macrolevel redesign of national promotion and resource allocation policy based on research-informed educational performance provides a powerful lever for directing change. Synergy between these levels reinforces virtuous cycles in which individual incentives, institutional capacity, and macropolicies work synergistically.

The study is most adamant on the core importance of “contextual adaptation” as a sustainability key. Imported models are predestined to fail irrespective of the particularities of scientific fields, the available technological infrastructure, and the Uzbek culture of higher education. The emergence of local frameworks of research-based approaches that at the same time guarantee scientific authenticity and cultural appropriateness is an unavoidable requirement for this shift. Proper implementation of these policy actions will not just improve the quality of students’ learning and graduates’ competence, but improve the

competitiveness of the Uzbek higher education system in the global environment of the knowledge-based economy. The key to success of this transformation lies in moving educational innovation to the center from the periphery into the environment of institutional routines, with research-based teaching as one of the core professional characteristics of lecturers and universities' organizational DNA.

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