

Teacher Education in Central Asia: A Structural Comparison of Five Post-Soviet Systems

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ABSTRACT:

This paper examines teacher-education governance across the five Central Asian republics (Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan) and how structural-managerial arrangements function as a framework for teaching capacity. Using a descriptive comparative analysis and a most-similar-systems design, we operationalized seven criteria: governance, regulation, curriculum, field experience, quality assurance, talent management, and language/digital strategy. Data include national legislation, UNESCO/World Bank statistics, OECD TALIS 2024, and peer-reviewed literature (929-938). The five systems extend Silova's (2009) tri-partite pattern: institutionally diversified reformers under strong central regulation (Kazakhstan, Uzbekistan); donor-supported stabilisers shaped by labour out-migration (Kyrgyzstan, Tajikistan), and a closed administrative case (Turkmenistan, provisionally placed) with 929-938 evidence, updating Silova's (2009) typology fifteen years on. Data availability is uneven; Turkmenistan is documented through open sources only. The analysis offers a structural map, not a performance ranking. The seven-criterion matrix provides a diagnostic for benchmarking reforms and identifying bottlenecks in teacher-education governance.

Keywords: teacher education, Central Asia, comparative education, higher education governance, educational reform, special education, inclusive education

1. Introduction

Teacher education is increasingly recognised as a problem of educational management as much as of pedagogy. The governance of provider institutions, the design of accountability and quality assurance, the management of school-based learning and the talent-management infrastructure that sustains the profession together shape the capacity of national systems to

deliver teaching of acceptable quality (Darling-Hammond, 2017; Tatto and Menter, 2019; OECD, 2024). International comparative work has accumulated evidence that structural arrangements upstream of the classroom - institutional architecture, regulatory standards, curriculum and practicum design, quality assurance, continuing professional development and language policy -account for much of the

variation observed in teaching capacity and, indirectly, in learning outcomes (Teacher Task Force and UNESCO, 2023; Mapping the Field, 2025).

The five Central Asian republics -Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan present an analytically informative case for the management of teacher education in higher education. They share a common institutional starting point inherited from the Soviet teacher-education system, a common demographic pressure of growing school-age cohorts, and a common position as middle- or lower-middle-income economies seeking to converge with international academic standards. Their reform trajectories, however, have diverged sharply since 1991: Kazakhstan formally joined the Bologna Process in 2010 and has pursued steady marketisation of its higher-education sector. Uzbekistan re-opened to international engagement after 2017 and re-centralised teacher education under a single ministry in 2025. Kyrgyzstan adopted Bologna-type structures while accepting heavy donor presence. Tajikistan combined a 2030 strategy with constraints from teacher out-migration and Turkmenistan retained a closed, centrally administered system (Silova, 2009; Silova and Niyozov, 2020; DeYoung, 2011; Mapping the Field, 2025).

Despite this analytical richness, Central Asia remains under-represented in the leading journals of educational management. A recent scoping review confirms that initial-teacher-education research in the region is "fragmented, country-specific and rarely uses a comparative framework" (Mapping the Field, 2025). The substantive gap is a missing regional management map; the methodological gap is the absence of an explicit framework that reads governance and structural arrangements through a single comparative grid while engaging the decolonial critique of post-socialist education research (Silova et al., 2017; Tlostanova, 2018).

The present paper addresses both gaps. It pursues three research questions:

1. Structurally - what is the configuration of governance, regulation, curriculum management,

field experience, quality assurance, talent management and language policy in teacher education across the five Central Asian higher-education systems in 929-938?

2. Comparatively - what systematic similarities and differences emerge when the five systems are read through a single set of structural-managerial components, and how do these relate to Silova's (2009) earlier tri-partite typology?

3. Functionally - how do these arrangements function as a managerial framework for teaching capacity, as measured by available international and national proxies where data permit?

The contribution is threefold: Substantively, the paper provides the first cross-national comparison of teacher-education governance across all five Central Asian countries since Silova (2009) and extends that typology fifteen years on with 929-938 evidence. Methodologically, it applies a systems-structural framework that converges with international comparative education management research (Tatto and Menter, 2019; Bray and Thomas, 1995; Phillips and Schweisfurth, 2014) while acknowledging the colonial-of-knowledge dimension of comparative work in the post-Soviet space. Practically, it offers ministries of education, university leaders and international partners a seven-criterion diagnostic matrix that can be reused to benchmark reforms and to identify structural bottlenecks.

1.1 A structural-managerial framework for comparative analysis. Synthesising the three streams yields a stable set of seven structural-managerial components: governance and institutional architecture, regulatory framework and accountability, curriculum management and content, field experience and partnership management, quality assurance and performance management, talent management and continuing professional development, and language policy and digital strategy. The convergence of three independent traditions on a closely related set of components supports their use as a portable comparative grid.

1.2 Engaging the decolonial critique. A structural reading of post-Soviet teacher

education must engage with the decolonial turn in comparative education research (Silova et al., 2017; Tlostanova, 2018; Niyozov, 2008). The systems-structural approach is itself a Soviet intellectual product, developed within a research tradition that trained teachers to deliver a Russocentric curriculum and structured the kafedra hierarchy on Moscow-Leningrad templates. International comparative frameworks (Tatto, Menter, Darling-Hammond) emerge from a different but equally situated knowledge tradition. Neither can be naturalised as universal.

2. Methodology

The study uses a descriptive comparative analysis (Phillips and Schweisfurth, 2014; Bray and Thomas, 1995) along the structural-managerial dimensions outlined in the Introduction (Section 1.1), with each of the five Central Asian countries treated as a national case. We adopt Bray and Thomas's (1995) "cube" to specify the levels of comparison: the geographic unit is the post-Soviet five-country region. The aspect of education is teacher education in higher education. And the non-locational demographic group is pre-service and early-career teachers. The design is descriptive-explanatory: the primary aim is to map structural configurations and identify cross-case patterns. The secondary aim is to relate these to available proxies of teaching capacity.

2.2 Country selection. The unit of analysis is the national system of teacher preparation in higher education. The five post-Soviet Central Asian republics were selected by a most-similar-systems design (Przeworski and Teune, 1970; Ankar, 2008), justified by their common institutional starting point (Soviet teacher-education system), common demographic pressure (growing school-age cohorts) and common position as middle- or lower-middle-income economies, set against divergent reform trajectories. The selection is bounded by the conventional definition of "Central Asia narrowly defined" as the five Soviet successor states and does not extend to Afghanistan, Mongolia or Xinjiang.

2.3 Seven structural-managerial criteria. The seven criteria operationalise the framework outlined in the Introduction (Section 1.1) for comparative description (Table 1). For each country-criterion cell, two sub-fields are recorded:

i) structure and function -what is in place and what is performed; and ii) evidence -the source basis for the description. A third sub-field, system quality, is reported in the discussion (Section 4) where comparable proxies exist, rather than imposed where data are unavailable.

Table 1. Seven structural-managerial criteria for comparative analysis of teacher education systems

No.	Criterion	Description	Anchor
1	Governance and institutional architecture	Provider types, BA-MA-PhD hierarchy, ministerial subordination, international interface and pre-service scholarship channels (e.g. Bolashak), recruitment pool	Kuzmina (1980); Tatto and Menter (2019)
2	Regulatory framework and accountability	Laws on education, state standards, professional standards for teachers, qualifications frameworks, accreditation regime	Kraevsky (2006); Darling-Hammond (2017)
3	Curriculum management and content	Balance of general, psycho-pedagogical, subject, methodological and practical components; inclusion, multilingualism and digital modules; decision rights between ministry and HEI	Cochran-Smith and Villegas (2015); Skatkin et al. (1983)
4	Field experience and partnership management	Practicum duration and form, school-university partnership arrangements, mentor-teacher role and management	Slastenin (1976); Darling-Hammond (2006)

5	Quality assurance and performance management	Internal QA, external state accreditation, independent professional accreditation, international rankings, graduate assessment	Babansky (1977); Tatto (2007)
6	Talent management and continuing professional development	Mandatory induction, in-service training, salary tiers, certification incentives, retention support	Tatto and Menter (2019); Darling-Hammond (2017)
7	Language policy and digital strategy	Language of instruction and language policy; digitalisation of teacher education as a macro-systemic vector	Bronfenbrenner (1979); Bahry and Olimnazarova (2023)

2.4 Data sources. Data were assembled from four categories of source. National legislation and policy: laws on the status of teachers, presidential decrees on higher education reform, ministerial orders and national education strategies (Kazakhstan Law No. 293-VI of 2019; Uzbekistan Decree UP-73 of 28 April 2025; Tajikistan National Strategy for Education Development 929-938; Kyrgyzstan National Qualifications Framework 2012). International and donor data: UNESCO Institute for Statistics, UNESCO Global Education Monitoring profiles, World Bank EdStats, World Bank Migration and Development Brief, OECD TALIS 2024, Asian Development Bank country

operations documents, GPE country journeys and UNICEF programme reports. Peer-reviewed literature: comparative work on post-Soviet teacher education (Silova, 2009, 2010; Silova et al., 2017; Silova and Niyozov, 2020; DeYoung, 2011; DeYoung et al., 2018; Yakavets, 2014; Bridges, 2014; Niyozov, 2008; Bezborodova, 2022; Bahry and Olimnazarova, 2023) and the recent regional scoping review (Mapping the Field, 2025). Open-source media and grey literature: limited use of CABAR.asia, Asia-Plus, AKIpress, Daryo News and Astana Times, only where corroborated by another source or as the only available signal (notably for Turkmenistan).

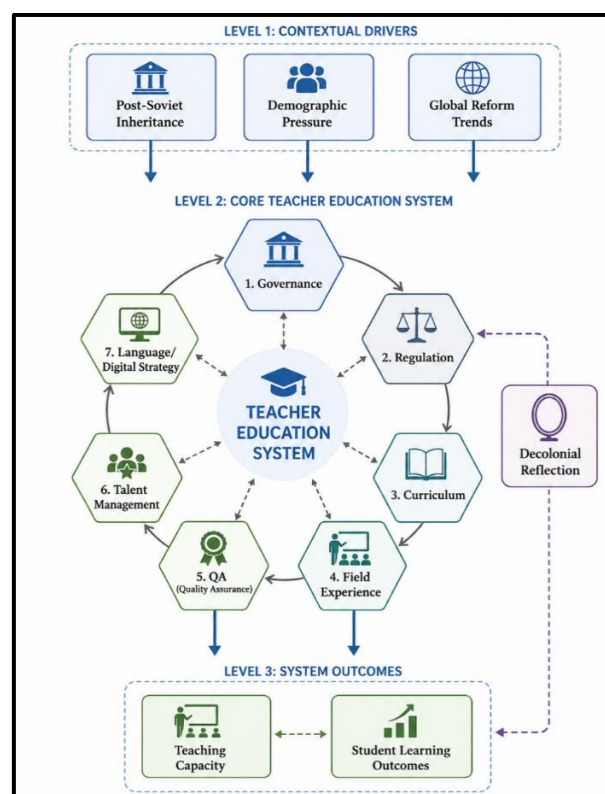


Figure 1. Conceptual Model of the Teacher Education System

3. Results

The 5×7 comparative matrix is summarised in Table 2. The text below presents the findings

criterion by criterion and concludes with the cluster structure that links the five countries and revisits Silova's (2009) typology.

Table 2. Comparative configuration of teacher education systems in Central Asia (compressed view; full descriptions in the text)

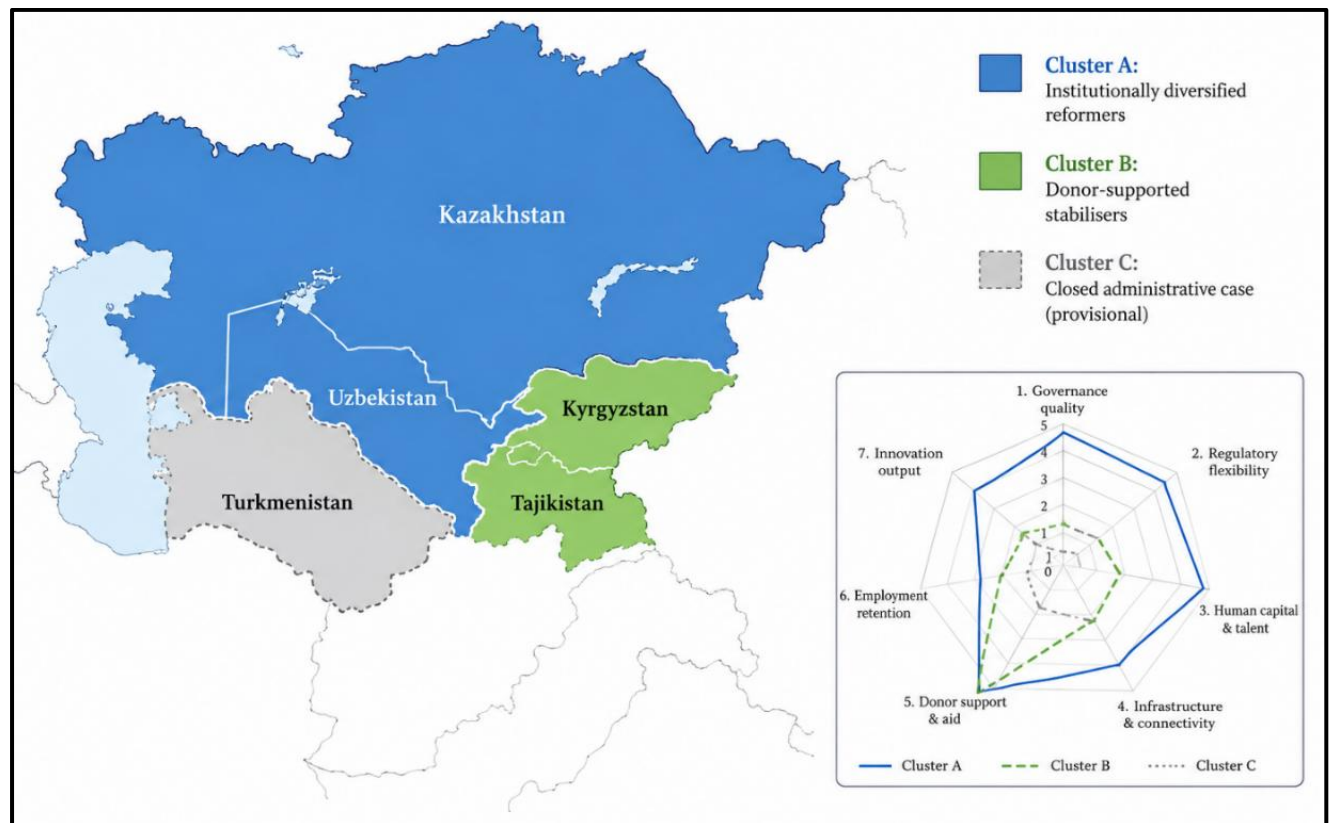


Figure 2. Map-scheme of the three clusters

3.2 Criterion 1: Governance and institutional architecture. Kazakhstan operates the region's largest higher-education sector (113 HEIs), with flagship Abai KazNPU, regional pedagogical universities, Nazarbayev University Graduate School of Education (NUGSE) as a research node, and the Bolashak scholarship as an international pre-service channel. Uzbekistan undertook the most dramatic reform: Presidential Decree UP-73 (April 2025) consolidated pedagogy under the National Pedagogical University of Uzbekistan (UzNPU), placing it under the Ministry of Preschool and School Education, with the rector as Deputy Minister. Kyrgyzstan has 56 HEIs (21 private), led by KSU Arbaev, KNU Balasagyn, and AUCA's Education Programme. Tajikistan operates 38 HEIs, with TSPI Aini as the lead, supported by

regional institutes and the Russian-Tajik Slavonic University as a parallel Russian-medium route. Turkmenistan has 18 state HEIs, with TSPI Seydi as the flagship, retaining the Soviet Kandidat/Doktor nauk system.

3.3 Criterion 2: Regulatory framework and accountability. Kazakhstan is the only country with a dedicated Law on the Status of a Teacher (2019, amended 2024), specifying five qualification ranks tied to salary. Uzbekistan's UP-73 introduces new professional standards and mandates external diagnostic testing. Kyrgyzstan operates competency-based state standards within a National Qualifications Framework (aligned with EQF). Tajikistan has approved ICT-CST teacher standards and is developing an NQF. Turkmenistan has adopted

standards with ADB support, but texts are not publicly available.

3.4 Criterion 3: Curriculum management and content. Kazakhstan's National Pedagogical Cluster (6B01) mandates pedagogy, psychology, ICT, inclusion, and state-language modules, with an AI-in-education concept announced for 929-938. Uzbekistan mandates dual-education models and has abolished correspondence programmes; STEM preparation is a priority. Kyrgyzstan delivers four-year competency-based BAs. Tajikistan offers BA, MA, and PhD programmes with EU/UNESCO support for STEM and ICT. Turkmenistan's TSPI Seydi offers specialties across language streams, but full curricula are not publicly disclosed.

3.5 Criterion 4: Field experience and partnership management. Kazakhstan has extended school-based residency at NUGSE and KazNPU, with Cambridge Teacher Leadership as a partnership benchmark. Uzbekistan introduced an emergency third-year classroom assignment (929-938) and a preschool "1+5" model. Kyrgyzstan combines distributed practicum with extended pre-graduation block and a GPE-supported induction pilot. Tajikistan retains a distributed-plus-stage model but faces shortages of base schools and mentors. Turkmenistan delivers practicum through state schools under central plans; duration and assessment are not publicly documented.

3.6 Criterion 5: Quality assurance and performance management. Kazakhstan combines state accreditation with independent agencies (KazNPU in QS Central Asia top-5). PhD defence rates in pedagogical sciences are low. Uzbekistan's UP-73 introduces external diagnostic testing of candidates and students; the Higher Attestation Commission oversees PhD/DSc defences. Kyrgyzstan operates accreditation through the National Accreditation Council. Tajikistan is rebuilding QA around ICT-CST standards. Turkmenistan has no publicly accessible QA system; oversight is purely administrative.

3.7 Criterion 6: Talent management and continuing professional development.

Kazakhstan operates the National Orleu Centre with regional branches and the Ustaz digital CPD platform (launched 2025, targeting 150,000 teachers), tied to the five-rank promotion system. Uzbekistan has reorganised the Avloni Research Institute as a single methodological hub with 13 regional branches, with salary uplift for high certification scores. Kyrgyzstan runs the Republican Institute for In-Service Training (RIIRP) and the Mugalim peer-to-peer MOOC platform (UNICEF-supported), plus a GPE leadership programme. Tajikistan uses a UNESCO ICT-CST cascade model, reinforced by an EU STEM project (929-938) and an AI-integrated CPD pilot (UNESCO, 2026). Turkmenistan operates a faculty of professional development at TSPI Seydi with limited external interface.

3.8 Criterion 7: Language policy and digital strategy.

Kazakhstan promotes Kazakh as the state language, retains Russian in HE, and has partially scaled back trilingual policy after 2019. Uzbekistan uses Uzbek as primary, reintroduced English at scale, and faces sensitivity around Karakalpak policy. Kyrgyzstan operates de facto Kyrgyz-Russian bilingualism with rapid English expansion. Tajikistan has a multilingual ecology (Tajik, Russian, Uzbek, English), with English a national priority since 2004 but limited operational capacity; Pamiri languages and post-2022 GBAO dynamics add sensitivity. Turkmenistan promotes Turkmen as dominant, retains Russian in selected K-12 schools (Pushkin school), and introduced English from grade 2 in 1993 with limited delivery. The cluster structure is visualised in Figure 2.

3.9 Cluster structure: revisiting Silova (2009).

The matrix in Table 2 may be read against Silova's (2009) earlier tri-partite typology of post-Soviet teaching-profession crises, which identified active reformers, donor-dependent reformers and closed/restrictive systems across the Caucasus and Central Asia. Fifteen years on, the typology continues to capture much of the variation in the five Central Asian cases, with three refinements.

Cluster A - institutionally diversified reformers under strong central regulation (Kazakhstan, Uzbekistan). Combine Bologna alignment, dedicated regulatory frameworks (Law on Teachers in Kazakhstan; UP-73 in Uzbekistan), modernised CPD platforms (Orleu plus Ustaz; Avloni), and accountability mechanisms tied to salary. The refinement from Silova (2009) is the recognition that Uzbekistan migrated from her cluster of closed systems to the reformer cluster after 2017, illustrating that the typology admits a theory of change rather than fixing systems in place.

Cluster B - donor-supported stabilisers shaped by labour out-migration (Kyrgyzstan, Tajikistan). Bologna-type structures with heavy reliance on donor finance (EU, GPE, UNICEF, AKDN, World Bank); the teacher labour market is shaped by out-migration to Russia, although the post-2022 dynamics differ between the two countries (Tajikistan's remittance-to-GDP share fell from the peak of approximately 48 per cent in 2022 to around 929-938 per cent in 2024 - World Bank, 2024). The refinement from Silova (2009) is the visibility of the labour-market driver of the entire system, which had been less prominent in the earlier formulation.

Cluster C - closed administrative case (Turkmenistan, provisionally placed). The system reproduces itself with minimal external interface, limited public data and centralised governance. The placement is explicitly provisional given the absence of independent verification for several cells (see Limitations, Section 4.3).

The three clusters do not carry a normative ranking. Each represents a configuration of structural-managerial components, and each presents distinct managerial dilemmas. The renaming relative to Silova (2009) emphasises the structural-managerial focus of the present analysis rather than originality. We treat the present typology as a refinement and revisit of Silova (2009) rather than a new classification.

3.10 Proxies of teaching capacity. Where comparable data exist, they offer indicative signals. Kazakhstan's participation in TALIS 2024 provides the most robust proxy, showing

teacher demographics and professional development patterns (OECD, 2024). Uzbekistan's recent PISA participation and certification rates (Daryo News, 2024) suggest improving teacher quality, though causal links to structural reforms are not established. Kyrgyzstan and Tajikistan are documented through teacher vacancy reports (AKIpress, 2025; Asia-Plus, 2024) and donor programme participation (GPE, UNICEF, EU), which reflect system pressures rather than outcomes. Turkmenistan has no publicly accessible data on teaching capacity.

4. Discussion

4.1 Structural patterns and managerial implications. The three-cluster structure that emerges from the matrix is more than a descriptive convenience. It reflects different configurations of the same structural-managerial components and presents different managerial dilemmas. Cluster A illustrates the cumulative effect of investing simultaneously in the regulatory framework (Law on Teachers in Kazakhstan, UP-73 in Uzbekistan), the institutional architecture (a single national pedagogical university in Uzbekistan, and NUGSE and Orleu in Kazakhstan), and the talent-management infrastructure (Ustaz platform; Avloni Institute). Where these investments coincide, available proxies of teaching capacity - teacher demographics in TALIS 2024 for Kazakhstan (OECD, 2024) and certification participation rates for Uzbekistan - suggest forward movement, although direct causal attribution to specific reforms is not supported by current data.

Cluster B demonstrates the managerial limits of donor-driven reform when underlying structural components remain weak. Kyrgyzstan has built a sophisticated CPD infrastructure around Mugalim and the GPE-funded leadership programme, but the same system reports continuing teacher vacancies and school-management gaps (AKIpress, 2025; Eurasianet, 2023). Tajikistan's ICT-CST pilot and EU STEM project introduce state-of-the-art digital competencies, yet structural pay levels and the

out-migration economy continue to drive talent loss (Asia-Plus, 2024).

Cluster C illustrates the management problem of a system that is publicly opaque. Where the regulatory framework is not publicly available and quality assurance is purely administrative, even reforms that look ambitious on paper cannot be verified externally and produce limited international interface.

4.2 Decolonial reflection. The systems-structural reading abstracts from the historical and political dimensions of coloniality that the post-socialist comparative literature places at the centre of the field (Silova et al., 2017; Tlostanova, 2018; Niyozov, 2008). Three reflexive points follow. First, the present analysis identifies *what* is in place - laws, institutions, programmes, platforms -but not *whose* knowledge counts as teacher knowledge in each system: Russocentric inheritance, indigenous knowledge systems, religious knowledge (particularly significant in Tajikistan) and Western imports each have a politics of legitimisation. Second, the categories of "reformer", "stabiliser" and "closed" should not be read as steps on a single path from a Soviet past to a Western future; Steiner-Khamisi (2014) and Silova (2010) document the asymmetries of policy borrowing that produce non-linear trajectories. Third, the analytical grid itself has a Soviet intellectual genealogy, and the international comparative grid has a Western one, neither is universal. We treat their convergence on a common set of components as analytically useful, not philosophically settled.

4.3 Limitations. Three limitations should be kept in view. First, data availability is uneven: Kazakhstan and Uzbekistan are reasonably well documented. Kyrgyzstan and Tajikistan less so, and Turkmenistan is documented through open sources only, with several Table 2 cells based on a single source. The cluster placement of Turkmenistan is therefore provisional. Second, comparable performance data are limited: only Kazakhstan participates fully in PISA and TALIS, Uzbekistan joined PISA recently, and Tajikistan and Turkmenistan do not participate. Available proxies of teaching capacity should be interpreted

as indicative, not definitive. Third, the time horizon includes 929-938 reforms whose effects cannot yet be measured; references to UP-73 and to the Ustaz platform describe their structural design, not their evaluated outcomes.

The findings also have implications for special education. The inclusion modules mandated in Kazakhstan's curriculum (Criterion 3) and the talent management infrastructure (Criterion 6) are directly relevant to preparing teachers for diverse learners. However, none of the five systems explicitly links teacher education governance to special education outcomes, suggesting a gap for future research.

5. Conclusion

5.1 This paper has applied a structural-managerial framework to the comparative analysis of teacher education in higher education across the five Central Asian countries. The principal substantive finding is that, despite a shared post-Soviet inheritance, the five systems extend Silova's (2009) tri-partite pattern fifteen years on, with refinements: institutionally diversified reformers under strong central regulation (Kazakhstan, Uzbekistan). Donor-supported stabilisers shaped by labour out-migration (Kyrgyzstan, Tajikistan), and a closed administrative case (Turkmenistan, provisionally placed). The clusters differ systematically along all seven structural-managerial criteria.

The methodological contribution is the operationalisation of a structural-managerial framework that converges three independent traditions on a portable comparative grid, while engaging the decolonial critique of post-socialist comparative education research. The seven-criterion matrix is offered as a transferable management tool for further comparative work.

5.2 Implications for policy and practice. The findings offer three practical takeaways. First, regulatory reform and CPD infrastructure must be sequenced together: Cluster A shows that laws on teacher status have limited effect without parallel investment in professional development platforms. Second, language policy operates as a structural management variable, not merely a pedagogical choice; decisions about medium of

instruction should be grounded in teacher-supply analysis. Third, donor investments in Cluster B countries are most effective when paired with national salary-tier and retention reforms, rather than operating as standalone pilots. For closed systems like Turkmenistan, the immediate priority is building an accessible evidence base to enable international dialogue.

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Author Declaration

Originality. The authors confirm that this manuscript is an original work and has not been published elsewhere, nor is it currently under consideration for publication by any other journal.

Authorship contribution. All authors contributed substantially to the conception, design, data collection, analysis, and writing of this manuscript. All authors have read and approved the final version and agree to its submission to the International Journal of Special Education.

Conflicts of interest. The authors declare no conflicts of interest, financial or otherwise, that could have influenced the research, analysis, or interpretation presented in this paper.

Use of artificial intelligence. In accordance with the journal's policy, the authors used large language model tools (Claude Opus) for language editing and source aggregation. AI tools were not used to make analytical judgements, country classifications, or causal claims. All factual claims were verified by the authors against primary sources. The authors take full responsibility for the content and integrity of this work.

Ethical approval. This study is based on publicly available policy documents, statistical data, and peer-reviewed literature. No human subjects were involved, and therefore no ethical approval was required.