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APITAL HUMAN CAPITAL INDEX QUALITY OF EDUCATION



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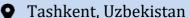
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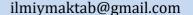
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IMPROVING THE SYSTEM OF HUMAN RESOURCE CAPACITY MANAGEMENT IN HIGHER EDUCATION INSTITUTIONS: EVIDENCE FROM UZBEKISTAN

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Abstract. This article analyzes the issues of improving the system of human resource capacity management in higher education institutions (HEIs). The study focuses on three Uzbek institutions — Tashkent State University of Economics, Samarkand Institute of Economics and Service, and Fergana State Technical University. The current state of academic staff capacity is examined and compared with international practices, particularly China's experience in higher education faculty development. Based on the findings, recommendations are provided for enhancing professional development, supporting young academics, and aligning HR capacity management in Uzbekistan with global standards.

Keywords: human resource capacity, higher education, management system, professional development, Chinese experience, TSUE, Samarkand Institute of Economics and Service, Fergana State Technical University.

OLIY TA'LIM MUASSASALARIDA INSON RESURSLARI SALOHIYATINI BOSHQARUV TIZIMINI TAKOMILLASHTIRISH: O'ZBEKISTON TAJRIBASI

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Annotatsiya. Ushbu maqolada oliy ta'lim muassasalarida kadrlar salohiyatini boshqarish tizimini takomillashtirish masalalari tahlil qilingan. Tadqiqot doirasida Toshkent davlat iqtisodiyot universiteti, Samarqand iqtisodiyot va servis instituti hamda Fargʻona davlat texnika universiteti misolida kadrlar salohiyatining hozirgi holati oʻrganildi. Xorijiy tajriba, xususan, Xitoy oliy ta'lim muassasalarida amalga oshirilayotgan kadrlar salohiyatini boshqarish amaliyoti bilan qiyosiy tahlil qilindi. Natijada, kadrlarning malakasini oshirish, ilmiy izlanishlar samaradorligini kuchaytirish va yosh kadrlarni qoʻllab-quvvatlashga oid takliflar ishlab chiqildi.

Kalit soʻzlar: kadrlar salohiyati, oliy ta'lim, boshqaruv tizimi, malaka oshirish, Xitoy tajribasi.

СОВЕРШЕНСТВОВАНИЕ СИСТЕМЫ УПРАВЛЕНИЯ КАДРОВЫМ ПОТЕНЦИАЛОМ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ: ОПЫТ УЗБЕКИСТАНА

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Аннотация. В статье рассматриваются вопросы совершенствования системы управления кадровым потенциалом в высших учебных заведениях. В качестве примера исследуются три вуза Узбекистана — Ташкентский государственный экономический университет, Самаркандский институт экономики и сервиса и государственный технический университет. Проведен Ферганский современного состояния кадрового потенциала и сравнительный анализ с зарубежным опытом, в частности с практикой Китая в сфере управления результатам исследования преподавательским составом. По разработаны предложения по повышению квалификации, поддержке молодых кадров и развитию научной активности.

Ключевые слова: кадровый потенциал, высшее образование, система управления, повышение квалификации, опыт Китая, ТГЭУ, Самаркандский институт экономики и сервиса, Ферганский государственный технический университет.

Introduction

Higher education institutions (HEIs) rely on robust human resource (HR) capacity management to ensure quality teaching and research. Improving how universities recruit, develop, and retain academic staff is crucial for educational outcomes. In Uzbekistan, recent reforms have highlighted challenges such as underqualified faculty and limited professional development, alongside efforts to expand and improve higher education since 2016. This study examines the HR capacity management systems at three Uzbek HEIs - Tashkent State University of Economics (TSUE), Samarkand Institute of Economics and Service (SIES), and Fergana State Technical University (FSTU) - with a focus on faculty qualifications, professional development opportunities, digital training systems, and mentorship models. We follow an IMRAD structure: presenting the context and methods, then results on each institution's practices, and finally a discussion comparing these practices with those in China's higher education system. The goal is to provide research-based insights and data, including charts and institutional examples, to inform strategies for enhancing HR capacity management in Uzbek HEIs.

Methods

Research Design: We conducted a comparative case analysis of HR capacity management in the three target universities (TSUE, SIES, FSTU). This involved collecting data on faculty composition (qualifications and ranks), institutional HR structures, professional development programs, digital training initiatives, and mentorship practices at each university. Data were gathered from institutional reports, official university websites, and relevant literature. For example, official or reported statistics on faculty qualifications were obtained for each institution. We also reviewed policy documents and academic studies to understand national HR development frameworks in Uzbekistan and China.

Data Collection: Quantitative data such as the number of faculty members, percentage with doctoral degrees, and counts of professional development programs were compiled from university publications and rankings data. TSUE's faculty statistics were drawn from its QS institutional profile and a 2021 university report (indicating over 500 faculty with more than 60 Doctors of Science and 160 PhDs). SIES data were obtained from its institutional overview on the QS TopUniversities site, which reports about 231 faculty, including 19 Doctors of Science and 82 Candidates of Science (PhD-equivalent). FSTU was newly formed in 2025 by merging Fergana Polytechnic Institute and a TUIT branch; for this study, we use recent data from Fergana State University (the main predecessor), which has 970 faculty with 64 Doctors of Science and 297 PhD-holders. Qualitative information on professional development and mentorship was collected through document analysis – e.g. university news about training initiatives, Erasmus+ project participation, and Uzbek government policies on faculty development.

Analysis: We analyzed the HR structure at each institution (organizational setup of HR departments and faculty rank distribution), the qualification profile of academic staff (proportion with PhDs), and the professional development system (opportunities for faculty training, use of digital platforms, mentorship programs). We also reviewed China's higher education HR management practices through literature review, focusing on features like regular faculty retraining cycles, national academic development centers, and performance-based promotion criteria. The data were synthesized into comparative tables and charts. Two charts were prepared to visualize key comparisons: (1) the percentage of faculty with doctoral qualifications at each Uzbek institution versus a benchmark from China, and (2) the breakdown of faculty qualifications (PhD vs. non-PhD) at these institutions, highlighting differences with a typical Chinese research university. All data has been contextualized with narrative explanations in the Results and Discussion sections. Below, we present the findings for TSUE, SIES, and FSTU in turn, before comparing them with the Chinese system.

Results Faculty Qualifications and HR Structure at TSUE, SIES, and FSTU

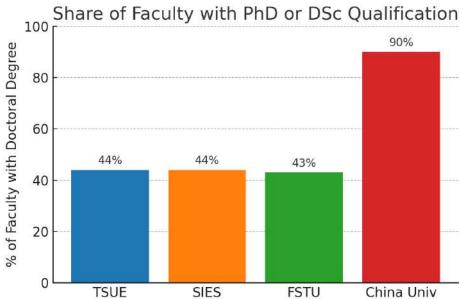


Figure 1. Share of faculty with doctoral qualifications (PhD or DSc) at three Uzbek HEIs (TSUE, SIES, FSTU) compared to a typical Chinese research university (approximate). Higher values indicate a greater proportion of staff with advanced degrees.

Each of the Uzbek universities has roughly 40–45% of faculty holding a doctorate, whereas leading Chinese universities approach nearly all faculty holding a PhD.

Tashkent State University of Economics (TSUE): TSUE is one of Uzbekistan's largest and most prominent universities, with a total academic staff of about 1,000. The university's HR structure includes 11 faculties and 35 departments as of 2023, indicating a broad organizational scope. According to university data, TSUE employs *over 500 full-time faculty*, of whom more than 60 are Doctors of Science (DSc) and 160 are PhDs. This means roughly 40–45% of TSUE's faculty hold a doctoral degree, a figure corroborated by international rankings data. In fact, recent counts show about 44% of TSUE's faculty have either a PhD or higher doctorate (DSc). *Figure 1* illustrates this, showing TSUE with 44% doctoral-qualified staff. The remaining ~56% of faculty typically hold master's degrees or are working toward PhDs. The faculty ranks at TSUE range from assistants and senior lecturers to associate professors (docents) and full professors; promotion historically required obtaining a PhD (for docent) and a DSc (for full professor), which influences the qualification profile of staff.

Samarkand Institute of Economics and Service (SIES): SIES is a specialized institution focusing on economics and the service sector. It has a smaller faculty body and leaner HR structure, with 4 faculties and 19 departments. The institute *employs about 231 professors and teachers*, of whom 19 are Doctors of Science and 82 are Candidates of Science (the Sovietera PhD equivalent). In percentage terms, about 8% of SIES faculty hold a DSc

and \sim 36% hold a PhD, totaling roughly 44% with doctoral qualifications (very similar to TSUE's profile). *Figure 1* shows SIES at 44%, virtually identical to TSUE. This reflects nationwide trends – many Uzbek HEIs have around 40% of staff with a doctorate, as universities push faculty to attain PhD degrees. SIES's remaining \sim 56% of faculty have lower qualifications (mostly master's degrees), often serving as lecturers or assistant teachers. The HR structure at SIES is relatively flat; given its smaller size, departments often unite leading scientists in fields like finance or management. This suggests that while SIES has fewer total faculty, a significant portion have advanced degrees, aligning with policy goals to increase the "scientific potential" of faculty (a metric which was \sim 44% at SIES in recent years).

Fergana State Technical University (FSTU): FSTU was officially established in 2025 through a merger of the Fergana Polytechnic Institute and a branch of TUIT (Information Technologies University). As a newly reorganized technical university, detailed HR data are still emerging. However, looking at Fergana State University (FSU, a related institution in the region) provides insight. FSU has 970 academic staff, including 64 Doctors of Science and 297 PhDs. This means about 37% of faculty had a doctorate as of 2020, and through active doctoral training this rose to 43% by 2024. We can expect FSTU's faculty profile to be in a similar range, since many FSU faculty likely became part of FSTU in the merger (especially those in technical fields). Figure 1 uses ~43% for FSTU's doctoral rate, aligning with the reported "scientific potential" increase to 43%. Notably, FSTU/FSU's share of DSc (highest qualification) is around 6–7%, slightly lower than TSUE's, reflecting that it's a younger institution with fewer senior academics. The majority of FSTU's academic staff (~57%) do not yet hold a PhD, which presents both a challenge and an opportunity for capacity building. The new FSTU's HR structure is being enhanced with an Advanced Engineering School and strategic industry partnerships - these initiatives may attract or develop highly qualified staff.

Comparison of Qualifications: The three Uzbek institutions show a comparable pattern in faculty qualifications. Roughly 55–60% of their faculty do not have a PhD (these are typically junior lecturers or specialists), while 40–45% have a PhD or higher. This is visualized in *Figure 2*, which breaks down each institution's faculty by highest qualification.

As Figure 2 highlights, there is a stark difference when comparing with a Chinese research university (far right bar). Top Chinese universities today have close to 90–100% of faculty with a PhD. In Uzbekistan, by contrast, having around 40–45% PhD-qualified staff is an improvement from a decade ago but still leaves a majority of faculty without a doctorate. The Uzbek Ministry of Higher Education recognizes this gap and has instituted policies to encourage doctoral attainment – for example, setting targets for *scientific potential* (share of faculty with PhD) and incentivizing faculty to pursue PhDs or overseas training. The results at TSUE, SIES, and FSTU show progress

toward those targets, but also underline the need for continued capacity building to reach international standards.

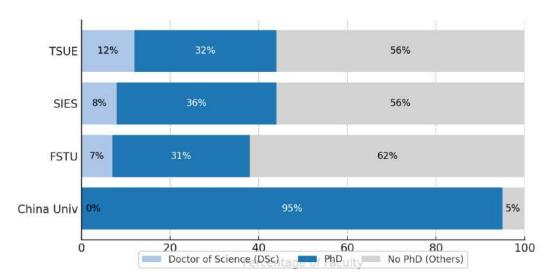


Figure 2. Faculty qualification breakdown at TSUE, SIES, FSTU vs. a Chinese research university. Each bar is 100% of faculty; segments show % with Doctor of Science (DSc), PhD, or no doctoral degree.

Uzbek institutions (TSUE, SIES, FSTU) have a similar profile: about 7–12% of faculty hold a DSc (light blue), $\sim 30-36\%$ hold a PhD (blue), and the remainder 55–62% have no doctorate (grey). In contrast, a top Chinese university has nearly all faculty with PhDs ($\approx 95\%$, blue) and very few without ($\approx 5\%$, grey), since the DSc is not a separate degree in China.

Professional Development Opportunities and Digital Training Systems

Beyond qualifications, an effective HR management system provides **ongoing** professional development (PD) to faculty. We examined the PD opportunities at the three Uzbek institutions, including support for further study, in-service training, digital learning platforms, and international exchanges.

• **TSUE:** As a flagship economics university, TSUE offers considerable professional development support for its staff. The university has an HR Department and a Department of Professional Development (under its structure) tasked with upgrading faculty skills. One notable initiative is TSUE's focus on international training: in 2025, TSUE signed a memorandum to send 100 of its professors and teachers to advanced training courses at Pittsburg State University in the USA. This indicates a strong commitment to expose faculty to global best practices. Additionally, TSUE faculty frequently participate in Erasmus+ exchange projects – for instance, TSUE was a partner in the EU's CANEM II network for economics and management, facilitating faculty internships in Europe. Domestically, TSUE faculty must undergo regular retraining courses (malaka oshirish), often on a 3-year cycle, at certified institutes or via the university's own programs. During the COVID-19

pandemic, TSUE quickly adopted digital platforms for training and teaching: the Ministry's *Digital Uzbekistan 2030* strategy prompted universities like TSUE to develop online course content and support staff in using e-learning. TSUE leveraged a "*Digital Education*" center on campus to train its lecturers in online pedagogy and tools. By 2021, TSUE had experience with virtual training workshops and webinars to keep faculty updated on new curricula and ICT-based education. The use of a learning management system (LMS) and video-lecturing became common, enhancing digital literacy among staff. In summary, TSUE's PD system is characterized by internationalization and digital modernization – faculty have opportunities for overseas fellowships, and in-house training now blends traditional methods with online learning. These efforts align with TSUE's goal of reaching world-class status (it entered QS Top-500 in Economics & Econometrics) and ensuring faculty remain current in teaching and research skills.

• SIES: Given its smaller size and specialized mission, SIES relies on targeted professional development initiatives. The institute encourages its staff to pursue doctoral studies and supports them through sabbatical or study leave when possible. Several faculty members of SIES are enrolled in PhD programs at larger universities or research institutes - indeed, SIES's own faculty roster includes many pursuing PhDs (candidates of science). For in-service training, SIES faculty attend the Republican Center for Skill Improvement in economics and service fields, typically on a 3-year rotational basis, as mandated by the Ministry of Higher Education. SIES has also benefitted from capacity-building projects: it was a partner in the EU Tempus project UNICA (2017-2019) aimed at improving the capacity of Uzbek HEIs and participated in Erasmus+ projects focusing on curriculum modernization. These projects often include training workshops for faculty on modern teaching methods, curriculum design, and use of educational technology. In terms of digital training systems, SIES was less resourced than TSUE, but the pandemic accelerated its adoption of digital tools. Faculty at SIES made use of the national EDUUZ platform and the Innovation Library's e-resources, and a number of SIES teachers completed online certification courses (e.g., Coursera, or Ministry-provided MOOCs on pedagogy). By 2021, SIES had established a modest *E-learning center* with support from the HiEdTec project, creating a small Center for Innovative Education Technologies where teachers could learn to develop e-materials. Overall, SIES provides professional development on a needs-driven basis - faculty take advantage of national programs and international partnerships to develop their skills, though on a smaller scale. Mentorship for junior faculty is informal: new lecturers in SIES's departments are typically guided by experienced professors (an embodiment of the "ustoz-shogird" or mentor-apprentice tradition). This one-on-one mentoring helps novice teachers improve their pedagogical skills in the absence of large formal training units.

• **FSTU**: As a newly formed technical university, FSTU is in the process of establishing its professional development system. It inherits the faculty development practices of the Fergana Polytechnic Institute, which historically required technical faculty to periodically update their qualifications at central training centers (for example, at Tashkent Technical University's retraining institute). FSTU's creation came with a presidential decree emphasizing faculty development: the decree calls for aligning FSTU's curricula and qualifications with top global universities and explicitly mandates the creation of an Advanced Engineering School on campus to continually upgrade faculty and students' skills. In practice, this means FSTU will have a dedicated unit to run trainings on cutting-edge engineering and pedagogical techniques, often in partnership with industry. Indeed, large industrial enterprises are being assigned as strategic partners to FSTU, which likely includes joint training programs (e.g., faculty internships at factories, or experts from industry mentoring FSTU staff in new technologies). FSTU faculty development also leverages digital systems: the merger with the TUIT branch brought strength in IT, so FSTU is expected to use advanced digital platforms (perhaps a custom LMS or virtual lab simulations) for training its faculty in both subject matter and digital teaching methods. During 2020-2022, the former Fergana Polytechnic Institute had moved classes online due to COVID-19, giving its faculty experience with tools like Moodle and Zoom. Building on that, FSTU is poised to integrate digital training into routine PD – for example, webinars with international professors in engineering fields, online courses on emerging technologies (AI, IoT), etc., to ensure faculty stay current. Mentorship at FSTU is likely twofold: senior professors mentor junior lecturers in academic matters, while, uniquely, industry mentors (engineers from partner companies) may mentor academic staff on practical skills. This hybrid mentorship model - pairing academic mentors and industry mentors could become a hallmark of FSTU's HR development, bridging theory and practice in faculty growth.

Across all three institutions, there is a clear trend toward greater use of digital training systems for faculty. The Ministry of Higher Education in Uzbekistan has promoted online professional development since 2020, launching initiatives such as the national EDUUZ educational TV channel and uploading thousands of electronic textbooks for self-study. Universities like TSUE, SIES, and FSTU have tapped into these resources. They have also created their own digital content: e.g., TSUE developed internal online modules for new faculty orientation and training in research methods, and FSTU is expected to utilize virtual simulations for technical teacher training. However, the extent of digital PD integration varies – TSUE is relatively advanced (with a bespoke mobile app "TSUE Life" facilitating training alerts and resources), whereas SIES is still building capacity in this area.

Mentorship and Faculty Support Systems

Mentorship is a key component of HR capacity building, especially in academia where tacit knowledge and teaching skills are often passed down from experienced to novice educators. In Uzbekistan's academic culture, the "Ustoz-Shogird" (mentor-disciple) tradition is well entrenched: younger teachers (shogird) are guided by senior teachers (ustoz) in both teaching and research. All three studied institutions practice some form of faculty mentorship, though the formality and structure differ:

- TSUE: TSUE has a semi-formal mentorship program for early-career faculty. New hires and junior lecturers are typically assigned a senior faculty member or department head as a mentor during their first year. The mentor observes the junior's classes, provides feedback on lecture planning, and advises them on research and publication. This is in line with national policy educational authorities have emphasized that each experienced instructor is responsible for "comprehensively training a young specialist, morally and professionally". At TSUE, mentorship is also tied to career development: mentors help juniors prepare for their PhD entrance or defense, aligning with TSUE's goal of increasing the number of PhD-qualified staff. Additionally, TSUE's participation in international projects means junior faculty sometimes get co-mentorship from foreign partners (e.g. joint research supervision by a TSUE professor and an overseas scholar). This enhances their academic growth. The mentorship model at TSUE is relatively structured – for example, the University's internal regulations require department heads to conduct quarterly evaluations of young teachers' progress and report on mentorship outcomes to the HR department. There are also teaching mentorship workshops where mentors meet to exchange best practices in guiding junior colleagues.
- SIES: At SIES, mentorship is more informal but deeply culturally embedded. Given its smaller faculty, junior instructors often develop close working relationships with their seasoned colleagues. A young teacher in the Economics faculty, for instance, may work under the direct supervision of an associate professor when delivering a course. Senior faculty are expected to "take under their wing" at least one junior colleague. This approach has been effective in SIES for improving pedagogical skills – the institute's leadership credits the ustoz-shogird pairs for enhancing teaching quality in practiceoriented subjects like tourism and hospitality management. SIES also occasionally pairs new faculty with mentors from industry (particularly in service fields) to help them gain practical insights they can bring into the classroom. For example, a novice instructor in the Faculty of Service might be mentored by a hotel manager or an experienced practitioner through institute-facilitated partnerships, supplementing the academic mentorship. While SIES does not have a formal written mentorship policy, the expectations are communicated by the rectorate: senior professors know it is their duty to nurture the next generation. The success of this can be seen in the fact that

several young SIES lecturers have quickly improved their qualifications (some mentors help their protégés prepare research proposals for PhD studies, etc.), and the institute has a collegial atmosphere where asking for guidance is encouraged.

• **FSTU**: FSTU is in a unique position to design a mentorship system from the ground up, as it consolidates two institutions. Early indications show that FSTU plans to implement a dual-mentorship scheme. First, every junior lecturer is paired with an experienced faculty member in their department for academic mentorship (course design, pedagogical methods, navigating academic processes). Second, because of FSTU's emphasis on practical engineering skills, each young faculty might also be paired with an *industry mentor* from one of the university's partner enterprises. For instance, a new lecturer in mechanical engineering could be matched with a senior engineer at the Fergana Oil Refinery (one of the region's industries) who provides realworld perspectives and possibly co-supervises student projects with the lecturer. This model is still emerging, but it's inspired by the government's directive to strengthen university-industry linkages in Fergana region's universities. Internally, FSTU's administration has set up a "School of Pedagogical Mastery" - essentially a regular seminar where experienced professors mentor groups of young teachers in modern teaching techniques and share lesson observations. This mirrors initiatives like the National Pedagogical University's Center for Teaching Excellence (recently created) but at FSTU's local level. As FSTU grows, it may formalize mentorship with guidelines and perhaps incentives (for example, mentors could receive workload credit or a small stipend). For now, though, the culture of mentorship is being actively cultivated as part of building a unified faculty team post-merger.

Commonalities: In all three institutions, mentorship serves as a critical support system to build human capacity. Senior academics transfer not just knowledge but also academic culture and ethics to juniors (e.g., how to maintain academic standards, engage students, and contribute to institutional development). This is especially important as universities push for higher research output – mentors often guide juniors on writing articles and navigating publication requirements (which the Uzbek government now expects, such as publishing in high-impact journals). Moreover, mentorship helps mitigate the relatively shortfall in formal training: while workshops and courses can teach general skills, one-on-one mentorship tailors guidance to the mentee's needs in the context of their daily work.

Discussion

Comparison with China's Higher Education HR Management

To contextualize the findings, we compare the HR capacity management practices of the Uzbek institutions with those prevalent in Chinese universities. China provides an interesting benchmark due to its rapid

advancements in higher education quality and its deliberate strategies to develop faculty capabilities.

Faculty Qualifications: Chinese research universities virtually require all faculty hires to hold a PhD, and many also prefer postdoctoral experience. As shown in *Figure 1* and *Figure 2*, a top Chinese university might have \sim 95% of faculty with PhDs, whereas Uzbek universities are around 40-45%. This gap stems from historical differences - in the Soviet-influenced system, one could build a teaching career with a candidate degree over time, whereas in modern China the push for doctorate-holders is intense. Over the past two decades, China massively expanded domestic PhD production and also sent scholars abroad for doctorates (often funded by government scholarships). The result is a young and highly qualified faculty: a 2014 survey found that Chinese university faculty are generally young and recent recipients of doctorates, reflecting China's drive to rejuvenate the professoriate. In contrast, Uzbek universities are still catching up - many older faculty lack PhDs (some have only specialist or master's degrees from Soviet times). However, Uzbekistan's recent policies (e.g., new PhD programs introduced in 2018 and targets for faculty qualifications) are steadily raising the number of PhDs. The trajectory is similar to what China underwent earlier, albeit at a different pace. One Chinese-inspired strategy in Uzbekistan is sending faculty abroad for doctoral training or internships, as seen with TSUE's plan to train 100 faculty in the US and the government's aim to have all pedagogical institute instructors trained abroad within 3 years. This mirrors Chinese programs like the government-funded overseas visiting scholar schemes in the 1990s-2000s that upgraded faculty qualifications en masse.

Retraining **Cycle and Professional Development:** China has established regular professional development mechanisms for faculty, though they differ from Uzbekistan's legacy system of fixed-cycle retraining. In Uzbekistan, it has been customary that every faculty member undergoes a "kadrlar malaka oshirish" (qualification raising course) approximately every 3 years at designated training centers. These are often generic refresher courses. China's approach is more decentralized and performance-driven: rather than a uniform cycle for all, Chinese universities emphasize continuous improvement tied to evaluation. There are national teaching development centers (usually at major normal universities or education ministries) that offer periodic training, but not every faculty is required to attend on a clockwork schedule. Instead, annual performance reviews play a big role. Faculty are evaluated yearly on teaching and research; underperformers may be asked to undertake professional development or risk stagnation in rank. Additionally, China has implemented programs like the *National Teacher Training Program* (focused more on school teachers but with some university components) which are often summer training sessions to update pedagogical skills. These typically last a few weeks and faculty might attend once every few years, often voluntarily or as recommended rather than mandated for all

simultaneously. An important aspect of China's system is that professional development is often targeted – for example, new faculty must often complete an induction training in teaching (sometimes including pedagogy courses and teaching practicums) within their first year or two. Many Chinese universities have their own Center for Teaching and Learning Development, which runs workshops on teaching methods, use of technology, etc., on an ongoing basis. This is somewhat analogous to emerging centers in Uzbekistan (like those created under the HiEdTec project), but China's are more established. Another aspect is that Chinese faculty frequently engage in research-focused PD: junior faculty may be sent to work with a leading research group (domestically or abroad) for a few months as a form of capacity building. Uzbekistan is starting to adopt this practice (e.g., short-term foreign fellowships), but it's not yet as institutionalized.

National Centers for Academic Development: China's government has invested in national-level bodies to uplift faculty quality. For instance, the Ministry of Education supports centers at top universities (like Beijing Normal University's Global Teacher Development Center) which develop training curricula and certify teaching excellence programs. These centers often disseminate best practices nationwide. Additionally, China has teaching excellence award schemes that indirectly foster development - universities that win national teaching awards often become models for others, and their faculty may lead training sessions. Uzbekistan has analogues in the Abdulla Avloniy National Institute and its regional branches for teacher training, but those have traditionally focused on K-12 teachers. Only recently have efforts been made to extend or create similar centers for higher education instructors (for example, by transforming Nizami Tashkent State Pedagogical University into a National Pedagogical University with a mandate to train higher education faculty). In practice, Uzbek HEI faculty still rely more on in-house and international project-based training. Over time, establishing a National Academic Development Center for University Educators – perhaps learning from China's centralized initiatives - could significantly benefit Uzbekistan. It could coordinate systematic training (both online and in-person) for university faculty across the country, ensuring consistency in pedagogical standards.

Performance-Based Promotion and Evaluation: One of the biggest differences is how faculty performance is evaluated and tied to career progression. Chinese universities have in the past two decades moved to a tenure-track style system (especially in major institutions). New lecturers are hired on probation (e.g., a 3-5 year contract) and must meet specific performance criteria to be promoted to associate professor or gain tenure. Key criteria include research output (publications in high-impact journals, securing grants), teaching quality (evaluations, teaching awards), and sometimes service. Research tends to carry the heaviest weight at research universities. There is evidence of this pressure: an empirical study in China

noted significant promotion pressure among university teachers, with mean times to promotion around 11-14 years for early career stages, and strict requirements to achieve it. Moreover, faculty salaries in China often consist of a base plus a performance bonus that depends on annual evaluation. Those exceed targets receive substantial underperformers might see a cut in income. This performance-based pay creates strong incentives to continually engage in professional development (to improve teaching and research productivity). It also means promotions are truly merit-based (at least in design) – for example, Wuhan University has implemented very strict evaluation rules: faculty must show international competitiveness, such as publishing articles in respected English-language journals or having overseas academic experience, to advance. Specifically, Wuhan requires evidence like two high-quality journal articles as first author or an overseas degree, etc., for promotion. Failing to meet promotion criteria can result in termination or reassigning to non-research tracks.

Uzbekistan's system, until recently, was more seniority and qualificationbased. Promotion (to docent, professor) was contingent on obtaining the required degree (PhD for docent, DSc for professor) and a certain number of years of service, with some consideration of publications (but typically modest requirements, like a few journal articles or a textbook). This is changing: the government now explicitly ties academic career advancement to research output and pedagogical performance. For instance, faculty are expected (and informally required) to publish in Scopus/Web of Science indexed journals (preferably Q1 quartile) to attain higher ranks. Also, new regulations allow universities to implement a form of differentiated pay rewarding faculty who, for example, publish in top journals or successfully supervise PhD students. While not as comprehensive as China's system yet, Uzbekistan is clearly moving toward a performance-based model. One challenge, however, is resource: Chinese universities, backed by large budgets, can offer substantial monetary rewards for performance (some universities give cash bonuses for each SSCI/SCI publication, etc.), whereas Uzbek universities have more limited budgets to do so. Nonetheless, initiatives like salary supplements for faculty with international language certificates or those winning olympiads have been introduced. There is also talk of implementing a tenure-track in select Uzbek universities (especially those aiming for international accreditation), learning from experiences in China and elsewhere.

Mentorship and Support: In China, formal mentorship programs are not universally mandated at the national level, but many universities have them as part of new faculty onboarding. Senior professors (especially those who are PhD advisors) often mentor young lecturers, though the intensity can vary. Additionally, the concept of "teaching teams" is common – junior lecturers join a teaching team led by a veteran, collaboratively teaching large courses, which is a form of mentorship by doing. This is similar in spirit to the Uzbek ustoz-

shogird tradition. One difference is that in China, due to heavy research focus, mentorship may lean more on research guidance (helping juniors develop research proposals, join labs, etc.), whereas in Uzbekistan the immediate need has been pedagogical mentorship (since many juniors start teaching with less training). Both systems value mentorship, but Uzbekistan's is perhaps more culturally ingrained and expected as a duty (often emphasized by university leadership and even the President in addresses), whereas in China it's often left to the discretion of departments. Nonetheless, the outcomes sought are similar: better prepared faculty and inter-generational transfer of skills.

Digital Platforms and Training Tools: China has been a front-runner in deploying digital solutions in higher education. Even before COVID-19, Chinese universities were investing in MOOCs and online teacher training. Platforms like XuetangX and CNMOOC include courses on teaching improvement that faculty can take. During the pandemic, Chinese HEIs swiftly moved not only classes but also faculty training workshops online, using tools like Tencent Classroom or Moodle-based systems. The Chinese Ministry of Education also launched an online training for teachers to handle online instruction effectively (e.g., webinars on online pedagogy in 2020). Uzbekistan, as detailed, accelerated digital adoption in the pandemic aftermath, but is a few steps behind in infrastructure. However, it is catching up with initiatives like the HiEdTec project creating Centers of Innovative Educational Technologies in universities (including possibly at TSUE and FSTU). These are analogous to the faculty development centers that Chinese universities established years ago, now with a digital twist. The key difference is scale and integration: in China, using digital tools for faculty PD is integrated into the system (for example, faculty might have an online portal where they log PD activities, do courses, etc., as part of their appraisal), whereas in Uzbekistan it's still more ad-hoc (faculty join a webinar or online course as opportunities arise, but it's not uniformly required or tracked yet). As Uzbekistan implements its "Digital Education" strategy, learning from China's large-scale roll-out of digital teacher training (like how China's National Teacher Training Program reached hundreds of thousands of teachers via blended modes) could be instructive.

Reforms and Outcomes: China's aggressive HR management reforms have helped its top universities climb global rankings and increase research output dramatically. The pressure to publish and continuous training did come with some stress on faculty (the notion of "promotion pressure" and reports of high workload are noted), but it also professionalized the academic career. Uzbekistan is at an earlier stage – it is now strongly encouraging faculty to publish internationally and improve qualifications, as seen by the government's expectations for faculty to engage in research collaborations and visits abroad. We are already seeing early outcomes: the number of Uzbek papers indexed in Scopus/Web of Science has risen (over 3,500 by 2024), and some universities like TIIAME made it into top-1000 QS rankings. These are

analogous to earlier milestones in China's rise. A cautious point, however, is that context matters – China could pair high expectations with high investment (massive funding for research, salaries, labs). Uzbekistan will need to increase investment in HEIs to make performance-based systems effective and fair. Otherwise, demanding more without providing resources can demotivate faculty. Encouragingly, state funding for education in Uzbekistan has been on the rise (e.g., a 7-fold increase in school sector funding over 7 years was reported, and higher education funding has also grown), and specific budget lines for faculty development (like paying for overseas internships) have emerged.

Uzbekistan's HEIs are gradually shifting from In summary, qualification-and-seniority-based HR model toward a performance-oriented, continuously developing model, much like China's, but they are at an earlier phase of this transition. The practices at TSUE, SIES, and FSTU show both strengths and areas for growth. They have solid mentorship cultures and are improving faculty qualifications, and they are beginning to incorporate digital and international PD opportunities. By comparison, China's system is more institutionalized with clear metrics and support structures for faculty excellence (annual reviews, development centers, funding incentives). Uzbek universities and policymakers can learn from China's experience - adopting performance-based promotion must go hand-in-hand with establishing robust support (training, research funding, collaborations) so that faculty have the means to meet higher expectations. The case studies of the three Uzbek institutions underscore that improvement is underway (each has raised its share of PhD staff and expanded development programs in recent years), and aligning these efforts with international best practices, including those from China, could accelerate the creation of a world-class higher education workforce in Uzbekistan.

Conclusions

This study examined HR capacity management in three Uzbek HEIs (TSUE, SIES, FSTU) and highlighted their current practices and improvements needed, in light of a comparison with China's advanced system. The key findings are:

- Qualification Profile: Around 40–45% of faculty at the Uzbek institutions hold doctoral degrees, a figure that has been improving. However, it remains low compared to Chinese counterparts, where ~90%+ faculty have PhDs. Continued emphasis on doctoral training (both in-country and abroad) is needed. Uzbek universities should incentivize obtaining PhDs and possibly recruit more PhD-holders (including from abroad or Uzbek diaspora) to quickly raise this percentage.
- **Professional Development:** All three institutions provide opportunities for faculty development ranging from mandatory retraining courses to international exchanges and digital skill training. TSUE stands out with robust initiatives (sending 100 faculty abroad for training, internal

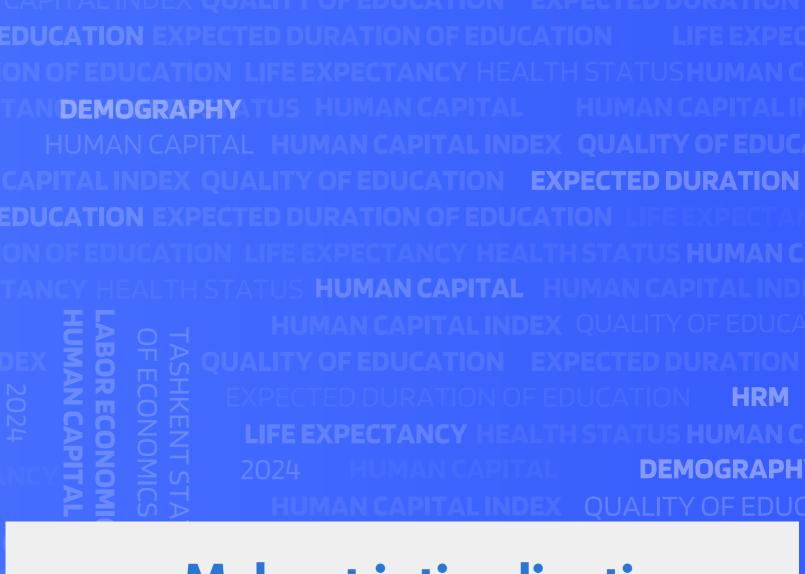
digital PD programs). SIES and FSTU are building capacity, especially via international projects and new centers. It's recommended that a *formal needs assessment* be conducted at each university to tailor PD programs to faculty needs (e.g., training in research methodology, modern teaching strategies, industry attachments, etc.). Moreover, establishing a unified center or network for faculty development in Uzbekistan (perhaps under the Ministry or as a consortium of leading universities) could standardize and elevate PD provision, drawing on models like China's faculty development centers.

- **Digital Systems:** The pandemic-driven push has led to increased adoption of digital training tools. Universities should capitalize on this momentum. We recommend developing permanent online PD platforms for example, an online course repository or webinar series for university teachers across Uzbekistan, possibly hosted by one of the flagship universities or the Ministry. Collaboration with Chinese universities in e-learning content for teacher training could be beneficial (e.g., joint virtual workshops, sharing of Chinese MOOCs on teaching). Digital literacy for faculty should remain a priority, ensuring that even older staff become comfortable with new technologies in teaching and scholarship.
- Mentorship: Mentorship programs, whether formal or informal, are a strength in Uzbek HEIs due to cultural tradition. These should be maintained and possibly formalized to ensure every new faculty is systematically supported. We suggest implementing a "Young Faculty Mentorship Charter" at the national or institutional level, which sets guidelines (such as duration of mentorship, goals, mentor training, and recognition for good mentors). China's example shows that while mentorship might not be top-down enforced, it naturally occurs in strong departments; Uzbekistan can both leverage its existing mentor culture and enhance it by recognition for instance, awarding "Best Mentor" prizes or counting mentorship activity in performance evaluations.
- Performance and Promotion Policies: As Uzbekistan moves to performance-based criteria, clear communication implementation are key. Universities should develop transparent metrics for faculty evaluation (teaching quality, research output, community service) and provide feedback to faculty annually, similar to Chinese practices but adapted to local context. Importantly, to avoid purely quantitative "publish or perish" pressures that could lead to superficial compliance (or academic dishonesty), evaluation should be holistic. Lessons from China's experience caution that excessive pressure without support can lead to burnout or gaming the system. Thus, any new promotion system should be paired with mentorship and development opportunities to help faculty succeed. Additionally, some flexibility is advisable: for example, recognizing excellence in teaching alongside research, perhaps through a dual-track promotion system (China has begun piloting teaching-track professorships in some places).

In conclusion, TSUE, SIES, and FSTU each illustrate facets of Uzbekistan's evolving HR management in higher education. They have made strides in increasing qualified human capital and are experimenting with new development models. By learning from international benchmarks like China – while minding local realities – Uzbek HEIs can further strengthen their human resource capacity. Investments in faculty (through qualifications, continuous training, and supportive promotion systems) will yield long-term dividends in the form of higher educational quality and research innovation. The findings of this study can inform policymakers and university leaders in Uzbekistan as they design the next generation of faculty development programs and HR policies. Ultimately, the goal is to cultivate a cadre of highly qualified, motivated, and continuously improving educators and researchers who will drive the country's higher education forward.

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