ETHICAL CHALLENGES AND SOCIAL IMPACT OF IMPLEMENTING ARTIFICIAL INTELLIGENCE IN UZBEKISTAN'S ACADEMIC ASSESSMENT

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Annotatsiya: Ushbu maqola O‘zbekiston oliy ta’lim tizimida baholash jarayoniga sun’iy intellektni (SI) joriy etishning ko‘p qirrali etik muammolari va ijtimoiy ta’sirini chuqur tahlil qiladi. Tadqiqot akademik halollik, algoritmik xatoliklar, ma’lumotlar maxfiyligi va raqamli tafovut natijasida kelib chiqadigan ijtimoiy tengsizlik masalalariga qaratilgan. "Digital Uzbekistan – 2030" strategiyasi doirasida OTMlar uchun SI etik yo‘riqnomalarini ishlab chiqish va inson nazoratiga asoslangan gibrid modellar bo‘yicha amaliy takliflar berilgan.

Аннотация: В данной статье глубоко анализируются многогранные этические проблемы и социальные последствия внедрения искусственного интеллекта (ИИ) в процессы академического оценивания в системе высшего образования Узбекистана. Исследование сосредоточено на вопросах академической честности, алгоритмических ошибок, конфиденциальности данных и социального неравенства, возникающего в результате цифрового разрыва. Даны практические рекомендации по разработке этических принципов ИИ для вузов и гибридных моделей на основе человеческого контроля в рамках стратегии «Цифровой Узбекистан – 2030».

Abstract: This research investigates the multi-faceted ethical dilemmas and socio-pedagogical impacts of integrating Artificial Intelligence (AI) into the academic assessment frameworks of Uzbekistan's higher education institutions. The study focuses on critical issues such as academic integrity, algorithmic bias, data privacy, and social inequality stemming from the digital divide. Within the "Digital Uzbekistan – 2030" framework, practical recommendations for developing AI ethical guidelines and human-centric hybrid models for HEIs are provided.

Keywords: Artificial intelligence, academic assessment, ethics, social impact, academic integrity, algorithmic bias, digital divide, Uzbekistan.

Kalit so‘zlar: Sun'iy intellekt, akademik baholash, etika, ijtimoiy ta'sir, akademik halollik, algoritmik xatolik, raqamli tafovut, O‘zbekiston oliy ta'limi.

Ключевые слова: Искусственный интеллект, академическое оценивание, этика, социальное воздействие, академическая честность, алгоритмическая ошибка, цифровой разрыв, высшее образование в Узбекистане.

Introduction. The integration of Artificial Intelligence (AI) in Uzbekistan's higher education system has transitioned from a theoretical possibility to a fundamental operational reality. Guided by the "Digital Uzbekistan-2030" strategy and recent presidential decrees on AI development (e.g., PQ-358), higher education institutions (HEIs) are increasingly adopting AI-driven proctoring, automated essay scoring (AES), and predictive analytics for student performance. While these technologies promise to eliminate human subjectivity and enhance administrative efficiency, they introduce a complex layer of ethical dilemmas that challenge traditional pedagogical values.

The move toward automated assessment is not merely a technical shift; it is a socio-pedagogical transformation that raises critical questions about equity and

justice. If an algorithm determines a student's academic future, who is responsible for its errors? This paper explores the ethical landscape of AI implementation in Uzbekistan, arguing for a "Human-in-Loop" approach to ensure that digital transformation does not come at the cost of social equity or academic integrity [Holmes, W., 2022: 543].

Literature Review. Global academic discourse on AI Education (Aled) highlights a profound tension between technical optimization and ethical responsibility. Luckin [2023: 112] introduces the risk of "cognitive offloading", where both students and evaluators may delegate critical thinking to A, leading to a shallow form of "algorithmic compliance". This is particularly dangerous in high-stakes assessments where nuanced human understanding is replaced by pattern matching.

Furthermore, UNESCO's recent guidelines emphasize that AI models are not neutral; they often inherit and amplify biases present in their training datasets [UNESCO, 2023: 12]. In the context of developing nations like Uzbekistan, where English or Russian may be second languages for a large part of the student body, AI models trained on Western datasets may penalize linguistic diversity. In the local context, the rapid adoption of systems like HEMIS has created a "policy vacuum" where the technical capability to monitor students exists, but the ethical framework to protect them is still under construction.

Moreover, the concept of 'Algorithmic Transparency' remains a significant hurdle in the local academic sphere. As Khine [2024: 735] notes in his machine-generated overview, the black-box nature of many AI assessment tools prevents educators from understanding how specific grades are calculated. This lack of transparency leads to 'Automated injustice', where a student's academic standing is determined by an opaque logic that neither the teacher nor the student can audit. Consequently, the challenge lies in balancing the

administrative speed of AI with the humanistic need for a transparent and explainable evaluation process.

Methodology. This research utilizes a qualitative analytical design, incorporating a normative ethical review of AI tools currently being integrated into Uzbekistan's HEIs (including proctoring software like ProctorEdu or Examus and integrated HEMIS modules).

- Data collection: A pilot survey was conducted among 20 university faculty members and 60 students from diverse fields (Artificial intelligence, Software engineering, and Drone technology) to gauge perceptions of "fairness" and "transparency".
- Analysis: Thematic analysis was used to categorize risks into three domains: algorithmic justice, socio-economic equity, and psychological well-being. This approach aligns with the framework of "Responsible AI" in education as proposed by international scholars.

To ensure the localized relevance of this research, the study also incorporated an analysis of the 'HEMIS' system's data -handling protocols. The investigation focused on how biometric data collected during proctored sessions is stored and who holds the 'data sovereignty' over these digital assets. By triangulating global ethical standards with the specific technical infrastructure of Uzbekistan's universities, the methodology provides a comprehensive view of the gap between current technological capabilities and the required ethical safeguards.

Results and Discussion

1. Algorithmic Bias and the Linguistic Barrier.

One of the most alarming finding is the potential for "algorithmic injustice". AI grading engines are typically optimized for standard linguistic patterns.

Students in Uzbekistan, who often produce code-switching or a typical syntax due to multilingual background, may find their work unfairly downgraded by AI. They cannot distinguish between “language interference” and “lack of subject knowledge” [Luckin, R., 2023: 118]. This creates a systematic disadvantage for students from non-urban or diverse linguistic backgrounds. This linguistic barrier is further complicated by the ‘native-speakerism’ bias inherent in LLMs. When AI penalizes an Uzbek student for using technically correct but culturally specific sentence structures, it reinforces a global academic hierarchy that disadvantages non-Western scholars, turning a tool for efficiency into a tool for cultural marginalization.

2. The Digital Divide: Geography as a Penalty.

The social impact of AI is heavily mediated by the “Digital Divide”. AI proctoring requires high-speed internet and high-definition hardware to function correctly. In rural areas of Uzbekistan, where internet stability is inconsistent, technical lags are frequently misinterpreted by AI as “fraudulent behaviour” or “suspicious movement.” This effectively penalize students for their socio-economic status. As Mollick [2024: 42] notes, AI can unintentionally become an “exclusionary gatekeeper” if the infrastructure is not democratized. Furthermore, the ‘Technical Anxiety’ caused by unstable infrastructure acts as a hidden tax on learning. Students in rural districts reported spending 30% of their exam time troubleshooting connection issues rather than answering questions, a factor that AI proctoring systems currently categorize as ‘suspicious inactivity’ or ‘lack of focus’.

3. Surveillance Culture and the Panopticon Effect.

Constant AI surveillance (eye-tracking, facial recognition) during examinations creates a “Panopticon effect” – a state where students feel perpetually watched by an unblinking algorithmic eye. Survey data revealed

that 75% of students reported higher anxiety levels under AI proctoring compared to human supervision. This stress hinders cognitive performance, meaning the exam measures a student's "calmness under surveillance" rather than their actual knowledge [Mollick, E. R., 2024: 45]. The erosion of the trust-based pedagogical relationship is perhaps the most lasting social impact. When a university replaces a teacher's intuition with a machine's eye, the student-teacher bond central to the Uzbek 'Ustoz-Shogird' tradition – is diminished, potentially leading to a dehumanized educational experience where students view themselves as mere data points.

4. Proposed Model: The Human-Centric Hybrid Model.

To mitigate these risks, this study proposes a Human-Centric Hybrid Model (HCHM). In this framework:

1. **AI for Efficiency:** AI handles the initial scanning of large datasets and provides preliminary feedback.
2. **Human for Equity:** All high-stakes decisions (failing a student, flagging for cheating) must undergo a mandatory review by a human educator.
3. **Contextual Grading:** Human instructors adjust AI-generated scores based on the student's local context and technical challenges.

Conclusion. The successful implementation of AI in Uzbekistan's academic assessment requires more than just high-speed servers; it requires a pedagogical revolution. We must establish institutional "AI Ethics Committees" to audit algorithms for bias and ensure transparency in data usage. Uzbekistan has the potential to lead a responsible digital transformation in Central Asia by prioritizing human judgement and social equity over mere algorithmic efficiency. By addressing the digital divide and the surveillance culture, HEIs can ensure that AI becomes a tool for empowerment rather than a source of new

inequalities. Ultimately, the path toward “Digital Uzbekistan 2030” must be paved with ethical foresight. We propose the creation of a “National Student Data Privacy Act” specifically for Higher Education to ensure that AI-driven assessments do not become a vehicle for commercial data exploitation. By transforming AI from an invisible judge into a transparent assistant, Uzbekistan can ensure that its digital transformation leads to a truly equitable and world-class academic environment.

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