Mishina Darya Pavlovna
student
Isaeva Anfisa Igorevna
student
Scientific adviser
Filipskaya Anastasia Vadimovna
senior lecturer
MIREA – Russian Technological University
Moscow

THE IMPACT OF WORKFLOW AUTOMATION ON THE QUALITY OF THE EDUCATIONAL PROCESS

Abstract: *based on the analysis of three studies, the article argues that automation of document processing improves the quality of the educational process not so much by speeding up work with documents, but through the harmonization of requirements with the help of digital templates, elimination of delays and duplication of functions through routing of agreements, as well as reduction of routine workload for teachers, which allows them to reorient themselves on analysis and pedagogical support of students. It is shown that to achieve a sustainable impact, automation must be accompanied by regulatory harmonization, staff training and compliance with data security regulations.*

Keywords: *automation of documentation, quality of education, electronic documentation, unification, training of staff.*

Мишина Дарья Павловна
студентка
Исаева Анфиса Игоревна
студентка
Научный руководитель
Филипская Анастасия Вадимовна
старший преподаватель

ФГБОУ ВО «МИРЭА – Российский технологический университет»
г. Москва

ВЛИЯНИЕ АВТОМАТИЗАЦИИ ДОКУМЕНТООБОРОТА НА КАЧЕСТВО ОБРАЗОВАТЕЛЬНОГО ПРОЦЕССА

Аннотация: *в статье на основе анализа трех исследований обосновывается, что автоматизация документооборота повышает качество образовательного процесса не столько за счет ускорения работы с документами, сколько через унификацию требований с помощью цифровых шаблонов, устранение задержек и дублирования функций за счет маршрутизации согласований, а также снижение рутинной нагрузки на преподавателей, что позволяет им переориентироваться на аналитику и педагогическую поддержку студентов. Показано, что для достижения устойчивого эффекта автоматизация должна сопровождаться нормативной унификацией, обучением персонала и соблюдением законодательных норм в области безопасности данных.*

Ключевые слова: *автоматизация документооборота, качество образования, электронный документооборот, унификация, обучение персонала.*

Introduction.

Modern education is undergoing a period of intensive digital transformation, yet the implementation of new technologies often encounters resistance from established bureaucratic practices. One of the most acute problems is the constantly growing volume of documentation, which distracts teachers and staff from their core activities. As Frolov Yu. V., Bocharov M.I., and Kusakina E.V. note, there are two main directions for the use of information and communication technologies in education. The first is the integration of ICT directly into the educational process. The second, which is the focus of this paper, is increasing the efficiency of educational organization management through the automation of administrative processes – including strategic and operational planning, monitoring of educational outcomes, document flow, financial management, and human resource management [4]. Paradoxically, the more attention is paid to formal reporting, the fewer resources remain for direct interaction with students,

the development of educational materials, and individual support. At the same time, the expansion of educational programs, particularly the integration of secondary vocational education (SVE) into the structure of classical universities, reveals systemic inconsistencies in the organization of document flow. The purpose of this article is to show, based on an analysis of three studies, how workflow automation can influence not just the speed of paperwork but the quality of the educational process as a whole, and what conditions are necessary for this influence to be positive and sustainable.

Bureaucratic Burden and Document Processing Speed: The Quantitative Aspect of the Problem.

The first step toward understanding the role of automation is to assess the time costs that the educational system currently bears for routine document work. Although direct measurements in the educational environment are scarce, data from related fields are revealing. Research in the production sector shows that workflow automation can reduce document processing time from 9 minutes to 1 minute and 40 seconds through the use of templates, auto-replacement of tags, and one-time entry of repetitive data [5]. In an educational context, similar logic applies to filling out grade sheets, certificates, individual plans, and reports. However, as will be shown below, transferring these principles to education requires consideration of specific barriers that are not reducible to simple time savings.

Specific Barriers to Document Flow in an Educational Institution (Case Study of a University with SVE Programs).

Concrete obstacles to effective document management were identified in a study conducted at Lipetsk State Pedagogical University named after P.P. Semenov-Tyan-Shansky (LSPU), where secondary vocational education (SVE) programs have been implemented since 2023. Belousova A.A. and Bogomolova A.V. show that the key problems lie not in speed per se, but in structural and regulatory mismatches [2]. These include: incompatibility of document formatting requirements (curricula, educational programs, regulatory acts), the university structure's poor adaptation to the specifics of SVE leading to duplication of functions and approval delays, the overload of teaching staff, and, most importantly, the predominance of paper-based document flow even

when electronic systems are available [2]. These data show that automation cannot be reduced to a simple replacement of paper with a screen – it requires a revision of the processes themselves and the regulatory framework.

Systemic Challenges of Electronic Document Management: Security, Training, Legislation.

In addition to local barriers, there are three universal challenges without which any automation remains ineffective. Abdurayimov L.N. and Malygin D.V. identify data security, staff training, and legal compliance. Educational institutions store vast amounts of sensitive information – personal data of students, financial documents, assessment results [1]. Protecting this data from cyber threats and leaks becomes a priority. At the same time, new technologies require new competencies: employees and teachers must not only be able to use the system but also understand security principles and the legal implications of their actions. Finally, any implementation must strictly comply with laws on data storage and transfer, confidentiality, and educational standards. It is at the intersection of these three conditions – technology, competencies, and law – that space for qualitative change is formed [1].

Three Mechanisms of Automation's Impact on the Quality of Education.

Bringing together the data from the three studies reviewed, three key mechanisms can be identified through which workflow automation begins to affect not the speed but the quality of the educational process.

First mechanism: unification of requirements through digital templates. The automatic generation of documents from unified templates (similar to replacing {Key} tags in production protocols) helps resolve the problem of differing formatting requirements. A unified digital environment ensures automatic alignment of curricula and work programs to the required standard without manual rework, eliminating discrepancies between departments [5]. At the same time, as Abdurayimov L.N. and Malygin D.V. emphasize, such templates and systems must include robust encryption and access control mechanisms so that unification does not turn into vulnerability [1].

Second mechanism: routing of approvals to eliminate delays and duplication. End-to-end electronic document management with automatic approval routing eliminates the problem of function duplication and delays characteristic of LSPU. Instead of physically transferring paper between departments, the system automatically forwards the document to the responsible person, records the time of each stage, and prevents the document from getting stuck [3]. Experience shows that paper-based document flow becomes the main bottleneck, and replacing it with electronic systems featuring automatic search and storage reduces the cognitive load on employees. Furthermore, workflow automation ensures monitoring of the implementation of educational and methodological work at the department level: the system records which documents have already been developed, which are in the approval process, and which need updating due to changes in educational standards [5]. However, as Abdurayimov L.N. and Malygin D.V. rightly note, the success of such a transition directly depends on staff training: effective training programs covering both technical aspects and training in security and legal compliance are a necessary condition [1].

Third mechanism: reduction of routine burden and reorientation toward pedagogical activity. Automation reduces the impact of staffing constraints. When a teacher or employee of the educational development department can generate a standard order, certificate, or individual student plan in a few clicks, resources are freed up for analytical work – tracking academic performance, timely adjustment of learning trajectories, and professional support for students [2; 3]. The document ceases to be an end in itself and becomes a tool, and the teacher is transformed from a scribe into an analyst.

Necessary Conditions for a Sustainable Effect: Regulatory Unification and a Strategic Approach.

Automation should not be piecemeal or fragmentary. As the authors of the LSPU study note, despite the problems, the integration of document management is proceeding rapidly, but for a sustainable result, it is necessary to develop unified regulatory acts, provisions, orders, and procedures for storing and transferring documents [2]. Without this regulatory unification, even the most advanced program will remain

merely a tool for acceleration, not for improving quality. Moreover, as Abdurayimov L.N. and Malygin D.V. add, educational institutions must strictly ensure that all their actions comply with laws concerning data storage and transfer, as well as document management standards [1]. This raises many issues of confidentiality and rule compliance that cannot be ignored when designing systems. In other words, the technological solution must go hand in hand with organizational and legal reform.

Conclusion.

Workflow automation affects the quality of the educational process through three interrelated mechanisms: eliminating requirement mismatches through unified digital templates, eliminating delays and duplication through routing, and reducing the routine burden on teachers and staff, allowing them to focus on the substantive side of education. The comparison of manual and automated document processing in the production sector (reducing time from 9 minutes to 1 minute and 40 seconds for three protocols) is merely a quantitative illustration of the same principle. In an educational organization, this principle translates into a qualitative leap: from chaos of paper approvals to transparent, controlled, and pedagogically oriented document management, where each document ceases to be an obstacle and becomes a tool for development. However, as Abdurayimov L.N. and Malygin D.V. conclude, further research and the development of best practices in security, staff training, and legal compliance remain necessary conditions for workflow automation to truly improve the quality of education, rather than creating an illusion of efficiency while preserving old problems in a new digital wrapper. Only an integrated approach combining technology, competencies, and regulatory framework can transform document management from a bureaucratic burden into a resource for educational development.

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