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**E-LEARNING COURSE "FORENSIC AUTHORSHIP
EXAMINATION" IN THE LAW UNIVERSITY EDUCATIONAL
ENVIRONMENT**

Tatiana P. Sokolova (a)*

*Corresponding author

(a) Associate professor at the Department of Forensic Examinations, Kutafin Moscow State Law University
125993, Sadovaya-Kudrinskaya str., 9, Moscow, Russia, sokolova58@mail.ru*

Abstract

The article is devoted to the problems of the development and approbation of the e-learning course "Forensic Authorship Examination" and its integration into the information and educational environment of a law university in order to improve the quality of special education. It shows the expediency and perspective of blended learning, which combines the principles and technologies of distance education with different forms of face-to-face instruction. Given the presence of a standard set of the LMS elements provided by the Moodle platform, the determining role is that of the teacher who creates the content of each module in accordance with the learning objectives. The teacher also establishes the trajectory of interaction between the learner and the information system in accordance with the learner's level of training. Specific examples of the creation and informative and didactic content of the electronic module demonstrate the LMS capabilities: the diversity and accessibility of Russian and international sources of information, the implication of methodological recommendations for carrying out final examinations, the teacher's consulting assistance (during the real-time reviewing of the examination submitted by the student, etc.); a high level of monitoring of student learning activities. Using the system of student achievement portfolios, which employers can familiarize themselves with, helps to implement a practice-oriented approach to learning. The results of the study and the developed recommendations can be used to improve the competitiveness of educational programs of the higher educational institution in the light of the objective of integrating Russian universities into the world educational space.

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1. Introduction

In line with addressing the common objective of integration into the world educational space (while preserving the national traditions of education and cultural code), faced by Russian universities, the format of the educational activities of higher educational institutions changes (Boguslavskii & Neborskii, 2016), the virtual educational environment is formed, and custom educational products are created under the influence of information technologies. The specificity of a law university consists in the constant modification of educational activities in accordance with the requests of the Russian Federation employees in the field of law, in particular the Chamber of Forensic Experts; and in the creation of a virtual educational environment, which is an important factor in increasing the competitiveness of the university's educational programs (Prigozhina & Trostina, 2017).

The information and educational environment of Kutafin Moscow State Law University (hereinafter referred to as MSAL) is formed on the Moodle cross-platform – Modular Object-Oriented Dynamic Learning Environment (<https://docs.moodle.org>). Under the guidance of the Moodle Foundation in Australia, an international development team is constantly improving this virtual learning environment. As a result, the modern version of Moodle 3 is distinguished by its reliability, ease of use, and rich functionality (Büchner, 2016). In Russia, the Moodle e-learning environment (hereinafter referred to as LMS) is introduced by the Open Technologies company (<https://opentechnology.ru/products/russianmoodle>), which provided MSAL with its product "Russian Moodle 3KL". The system of distance learning is constantly updated and modified in accordance with the tasks of professional education in a law university, and at this stage of the development of the university's information and educational environment, electronic courses are being created on the basis of the current version of the LMS "Russian Moodle 3KL 3.1.8".

This article is devoted to the problems of development and mastering of the e-course "Forensic Authorship Examination" and its integration into the information and educational environment of a law university.

2. Problem Statement

According to the Federal State Educational Standard of Higher Education, the specialty 40.05.03 Forensic Examination is taught out only on an intramural (face-to-face) basis. The organization is granted the right to use e-learning and distance educational technologies, but purely electronic learning is prohibited. In this regard, developers of the virtual educational environment of a law university are faced with the objective of an optimal combination of intramural and distance learning, identification and approbation of effective forms of "blended learning". According to C. Bonk et al. (Bonk, Graham & Moore, 2006), we understand the latter as the combination of traditional full-time interaction between the teacher and the student using technologies available with the help of electronic educational resources in order to solve key pedagogical tasks.

As shown by the study of the phenomenon of blended learning in the United States, in Europe, in Australia and in Russia, conducted by N. Lomonosova (2017), on the one hand, electronic educational resources do not always integrate into a coherent system and are mistakenly considered by teachers and university administrations as a list of independent components, as an auxiliary tool. On the other hand, the effectiveness of blended learning is confirmed by the data of opinion polls. In this regard, we cannot agree

with the stance of a number of Russian teachers who, within the framework of "e-learning", reduce the teacher's task only "to accompanying learners with the aim of formalizing and systematizing personal experience, adjusting the replenishment of their knowledge" (Kozlova, Cherkasov, Makashova & Davletkireeva, 2017). According to the analysis of the practice of Russian and foreign e-learning management, "information technology can not completely replace classical education in general and the teacher in particular" (Sergeeva, Sokolova, Bodenko, Egorova & Mishatkina, 2017). In this regard, it is blended learning, combining the principles and technologies of distance education with classical, face-to-face activities, that seems promising.

3. Research Questions

How to combine the opportunities of the information and educational environment of a law university with the achievements of the traditional methods of teaching legal and linguistic disciplines?

The information and educational environment of MSAL provides an opportunity to combine various learning models (intramural, remote, blended), to create and edit educational materials directly in a cross-browser and understandable system interface, to log all user activities in the system, to monitor student learning activities and mentoring, to integrate with other systems. The hierarchical structure of the LMS modules reflects the university's structure: each institution forms a system of electronic courses with the possibility of using common databases, forums, integrating with the "Rusconet" Electronic Library System.

What is the place of the e-course "Forensic Authorship Examination" in the LMS structure and what forms of student and teacher activities are optimal for combining?

At the same time, in view of the active introduction of information technology into the educational process, the issue of reducing pedagogical risks associated with the negative influence of the "virtual reality" on the personalities of students, on their social activity in real life, the scope and nature of their personal communication becomes acute (Ivanova, 2016).

4. Purpose of the Study

The training on the legal and linguistic specialty "Forensic Speech Examinations" is carried out at the MSAL Institute of Forensic Examinations as part of the basic educational program in the specialty Forensic Examination (specialist level). The "Forensic Authorship Examination" course is one of the core ones in the block of the specialty disciplines and completes the formation of professional competences necessary for carrying out professional activities in the field of examination of pieces of speech (Galiashina & Sokolova, 2018). In these conditions, it is necessary to consider how the development of the e-course "Forensic Authorship Examination" and its inclusion in the information and educational environment of a legal university will help to optimize the mastering of the discipline by students, change the amount and quality of the face-to-face, group and individual work of the teacher with students.

The goal of the article is to show the advantages of blended learning for improving the quality of educational services in a law university on the example of the development and implementation of a particular electronic course.

5. Research Methods

Competency-based, personality-oriented and practice-oriented approaches to learning became the methodological basis of the study. The information and educational environment should recreate the reality and specificity of the legal business world as accurately as possible, thereby preparing students for their professional activities.

The research methods were the following: observation, including empirical, and participant observation, which is often combined with other forms of data collection; description and analysis of the data obtained; case study (Cohen, Manion & Morrison, 2018), which allows to give a detailed presentation of a specific course module.

Methods developed by foreign scientists were used to evaluate the effectiveness of e-learning forms: performance monitoring based on feedback analysis, including interviews (Coe, Waring, Hedges & Arthur, 2017), as well as methods for diagnosing learning and knowledge interaction (Romanov, Romanova, Kiseleva & Bespalova, 2017), which make it possible to evaluate to what extent the training potential of computer support systems of the educational process is used by learners.

6. Findings

"Forensic Authorship Examination" is an extensive course (7 credit units, 252 academic hours, including 96 for student independent work), which allows us not only to integrate individual electronic resources in the traditional face-to-face format, as it has been done earlier (Remchukova & Sokolova, 2016; Remchukova, Sokolova, Zamaletdinova, 2017), but to essentially revisit the informative and methodological content of the discipline, creating a new electronic educational product.

The general section "Educational and Methodological Complexes" includes literature on the discipline, Internet resources and dictionaries, questions for certification, requirements for various forms of student independent work of students. The cross-platform nature of the LMS helps not only to promptly and easily receive methodological information, but also to access the website of a particular source, refer to the text of a specific document.

The LMS makes it possible to use the created "Glossary" (180 terms) not only as reference material placed in alphabetical order, but also as a play-based teaching material: the teacher makes up activities in the form of a crossword puzzle, which students (according to the feedback evaluation) enjoy performing individually or small groups.

The course, designed for two semesters, consists of two sections, including four modules. The functions of displaying course sections in the form of a grid, customizable blocks on all pages provide the opportunity to create user-friendly content. The learning material of each module is divided into topics the content of which the teacher develops in accordance with the competences to be formed; the teacher also determines the trajectory of interaction between the learner and the information system in accordance with the student's level of training. Based on the monitoring results, the used educational information visualization technologies intensify the perception of the material, increase the motivation for learning.

We will further show the creation of elements of the university's information and educational space on specific examples.

Cases of Topic 6 "Subject of Forensic Authorship Examination"

Earlier, prior to the introduction of the LMS, to solve the educational task of drawing up the profессиogram of an authorship expert, the teacher tested the methodology of work in a small social group – from 3 to 7 people, brought together for a certain period of time (14 days in our case). This interactive method enables interaction in the "student-student" structure and in the "group of students-teacher" structure, thus consequently affecting the change in the psychological situation in the learning group, the way of communication, the perception of information, and the creative activity of students. However, in the process of applying this method, methodological and organizational difficulties were revealed: conducting face-to-face consultations with the supervisors and participants of each small group is very time-consuming; due to personal factors the groups work asynchronously, which affects the timing and quality of interviews with experts and the presentation of results precisely before the practical lesson. The impossibility of the teacher's control over the selection of tests and individual completion of them by students, the use of different tests by different groups brought about the incompatibility of the results of testing participants of various small groups. The above-listed difficulties and shortcomings were overcome through the integration of the LMS educational and methodological resources into in-class work and work in small groups.

1) 14 days before the face-to-face practical lesson, the teacher sets the educational goal, selects the specialists to be interviewed by each group:

experts of a state expert institution;

experts of a scientific and research center for forensic examinations; experts of a non-governmental expert institution;

teachers of the discipline "Forensic Authorship Examination".

2) The teacher creates a "Folder" in the LMS and uploads the files for shared use:

file 1 – Theoretical materials,

file 2 – Principles and rules of drawing up a profессиogram,

file 3 – Examples of psychograms and profессиograms.

3) The teacher opens the "Database", an electronic module that has significantly improved the stage of group work on the profессиogram. The structure of records is determined by the teacher through the number of fields: text areas (a profессиographic survey questionnaire), flags, switches, drop-down lists, hyperlinks (to bibliographic sources on the topic), downloadable files (tests for a psychogram) and images (picture tests for checking vision, memory, etc.).

It is not necessary that each student participate in filling out the database: the students in a small group distribute the types of work themselves. Someone selects materials and tests, someone prepares a questionnaire, someone surveys experts and writes down their responses, someone processes the data received, someone structures the results in a presentation project, someone stays in constant virtual contact with the teacher (via the forum), someone fills out the "Database" in the LMS. It is important that there be a constant interaction and discussion of interim results within a small group, that adjustments of actions be carried out.

4) Prior to a practical lesson, the teacher creates an LMS element "Test" using the "Database", for each student to his or her qualities that are necessary for authorship experts.

5) A practical lesson combines in-class work and electronic testing. The first part is a discussion of the subject of forensic authorship examination, an analysis of the results of the survey of practitioners, presented by small working groups. The second part involves testing in the LMS with a time limit, under the teacher's supervision (which ensures the reliability of the results).

6) Laboratory work in the format of the "Task" learning element summarizes and completes the work of small groups and each student on the topic and allows the teacher to collect student work, evaluate it and provide feedback and comments. Students can send any digital content (Word documents), spreadsheets, images (a completed psychogram and professiogram), audio or video files (e.g., a recording of a survey of experts). After the student has sent an answer, the teacher receives information about the need to check the completed task. After the correction, the student receives a notification about the result via text message and can access not only the grade for the work in points, but also all the notes and comments made by the teacher in the response. The grade for laboratory work is automatically recorded in the assessment roster.

7) The LMS "Synchronization" function makes it possible to clearly organize all the steps in the solution of a learning task, and the "Customizable formula for grade calculation" objectively reflects the results of the competition between small groups.

Cases of Topic 9 "Genesis and Stages of the Development of Forensic Authorship Examination in Russia and Abroad"

Due to the use of the LMS, the possibilities of studying this topic have expanded considerably. The features of the information and educational environment of the university enabled the teacher to create assignments that require that each student refer to the materials on Russian and international websites. This shapes a skill of working with information retrieval systems, compiling abstracts of fundamental works on authorship examination, including in English, in particular the section "Authorship attribution" from the fundamental work "An Introduction to Forensic Linguistics: Language in Evidence" (Coulthard, Johnson & Wright, 2016), where the author attribution is primarily based on a combination of stylistic and statistical text indicators, and the issues of textual borrowings are placed in a separate block. It is compulsory to visit the website of The Centre for Forensic Linguistics at Aston University (<http://www.forensiclinguistics.net/>) and compare it with the content of the website of one of the Russian expert communities, e.g., the Association of Experts of the South of Russia, the Siberian Association of Expert Linguists.

Students are encouraged to find and compare data on the stages of the formation of authorship studies from different sources (with mandatory reference to works of foreign scientists and practitioners, e.g., the monograph "Authorship Attribution" (Juola, 2008). In the "Historical Overview" section of this monograph, the author emphasizes "Classical Approaches" and analyzes a number of historical attempts to establish authorship, e.g., an attempt to apply "frequency analysis" in English courts in the 1990s, and also the book "Forensic Linguistics" (Olsson & Luchjenbroers, 2014), based on Olsson's extensive experience as a forensic linguist.

Students are urged to pay particular attention to the description of the current stage of the development of authorship studies. They are also encouraged to choose works on the analysis of web communication, e.g., e-mails in M. Corbin (2010), short messages (based on Twitter text corpus) in S.R. Boutwell (Boutwell, 2011), blog texts in M. Koppel et al. (Koppel, Schler & Argamon, 2010), micro-

messages in R. Schwartz et al. (Schwartz, Tsur, Rappoport & Koppel, 2013), “function words adjacency networks” (Segarra, Eisen & Ribeiro, 2013), etc.

The book "Forensic Authorship Analysis and the World Wide Web" (Larner, 2014) is offered for a separate project-presentation, since forensic expert examination of web communication texts is an urgent task of Russian expertology.

The LMS capabilities allow to switch to Topic 14 "Examination of Electronic Correspondence" of the second section of the course in order to subsequently attach the data found by the students and verified by the teacher to the relevant control examination.

Thanks to the LMS, the teaching of compiling a bibliography and brief annotation is taken to a new level, as electronic resources of leading universities are involved. E.g., the topic content includes a review by S. Larner (University of Central Lancashire Preston), which clearly demonstrates how to characterize works on forensic linguistics and offers the Annotated Bibliography of the use of Corpora and Corpus Techniques in Forensic Linguistics Research (Larner, 2015). Proceeding from the annotated bibliography by S. Larner (50 sources), the instructor developed tasks in the LMS format: "Survey" (to quickly test the understanding of corpus technologies in forensic linguistics), as well as the "Database" module (to enrich a joint collection of web links, bibliographic lists and reviews).

Thus, the diversity and availability of information sources is an important factor in optimizing the educational environment that promotes the development of the student's personality and the formation of his or her professional competences.

Efficacy of the LMS at the final stage of the course

As shown by the monitoring, it was at the final stage of the training – during the preparation and implementation of expert opinions – that it was possible to achieve high results, thanks to the LMS. The university's information and educational environment allows the student to get acquainted with the plot, get the definition of the purpose of the forensic authorship examination, employ the materials of the studied courses "Theory of Forensic Examination", "Participation of the Specialist in Procedural Actions", use the common database of expert opinions and the database of bibliographic data, receive a distance teacher's consultation on specific issues of any part of the expert examination, submit a draft of the finding followed by the final version of the drawn up document for review – all at the stage of the preparation of the expert's opinion on a specific case. The teacher has the opportunity to work individually with each student: using convenient tools (highlighting, underlining, different types of graphic marks, creation of comments, etc.). The teacher also reviews the text of the decision, and the student sees all the teacher's actions in real time or opens a file with corrected work upon the receipt of a notification and remotely discusses unclear points with the teacher. Integration with the Antiplagiar Internet service provides automatic verification of the degree of originality of the texts created by students. The functions "Allow new attempts" and "The student can correct the answer" added in the settings of the "Task" module give the possibility to improve the quality of the credit work for the course. Having received the final version of the expert evidence, the teacher, in addition to textual correction with the use of a set of visual and informative markers, gives feedback on the work as a comment that appears next to the final score.

Considering the practical focus of the discipline "Forensic Authorship Examination", it was relevant to use the system of student achievement portfolios, which employers can familiarize themselves with. It

provides a full report on the students' activities during the course and the expert opinions drawn up by them. The improvement of the quality of training of specialists was noted by employers during the final attestation.

7. Conclusion

Summing up the development and approbation of the course "Forensic Authorship Examination" as an electronic component of the unified information and educational environment of a law university, we came to the following conclusions:

The integration of the previously developed informative and methodological content of the discipline into a single information and educational space of the university makes it possible to implement the advantages of mixed instruction: to use the new functional capabilities of electronic forms of instruction, on the one hand, and to eliminate the shortcomings of the traditional method of teaching legal and linguistic disciplines, on the other hand;

Given the availability of a standard set of the LMS elements provided by the Moodle platform, the defining role is that of the teacher creating the content of each module and each topic in accordance with the learning tasks and the set of competences to be created and establishing an adequate correlation between full-time, mixed and distance learning models;

The place of the electronic course "Forensic Authorship Examination" is determined by the hierarchy of the LMS modules of the specialist program with the possibility of using common databases, forums and other resources;

The reduction of pedagogical risks associated with the negative impact of "virtual reality" on the student's personality is achieved through the optimal combination of full-time communication with distance learning, using the achievements of traditional forms of education.

The analysis of the effectiveness of educational and information interaction helped to identify the following indicators: a high level of monitoring of students' learning activities, including systemic recording of the activities of each student and multidimensional processing of the information on his or her learning progress. The work of the student with the information and educational environment is methodically thought out, the trajectory of students' interaction with the information system corresponds to the level of their training, current educational goals and tasks, which makes it possible to fully implement competency-based and person-oriented approaches to education and improve the quality of the training of specialists.

References

- Boguslavskii, M.V., Neborskii, Y.V. (2016). *Development of Russian Universities in the Information Era*. Retrieved from: <http://www.futureacademy.org.uk/files/images/upload/EEIA2017FAF023.pdf> / DOI: <http://dx.doi.org/10.15405/epsbs.2017.08.23>
- Bonk, C.J., Graham, C.R., Moore, M.G. (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs*. San Francisco, CA: Pfeiffer Publishing.
- Boutwell, S.R. (2011). *Authorship attribution of short messages using multimodal features*. Master's thesis, Naval Postgraduate School, Monterey, CA, USA.
- Büchner, A. (2016). *Moodle 3 Administration*. Third Edition. Birmingham, UK: Packt Publishing.

- Coe, R., Waring, M., Hedges, L.V., Arthur, J. (2017). *Research Methods and Methodologies in Education*. Los Angeles, London, New Delhi: SAGE Publications Ltd.
- Cohen, L., Manion, L., Morrison, K. (2018). *Research Methods in Education*. Eighth edition. London and New York: Routledge.
- Corbin, M. (2010). Authorship Attribution in the Enron Email Corpus. Baltimore County: University of Maryland Publ.
- Coulthard, M., Johnson, A., Wright, D. (2016). *An introduction to forensic linguistics: Language in evidence*. London and New York: Routledge.
- Galiashina, E.I., Sokolova, T.P. (2018). *Sudebnaia avtorovedcheskaia ekspertiza: rabochaia programma*. Moscow, Universitet imeni O.E. Kutafina Publ. [in Rus.].
- Ivanova S.V. (2016). *Pedagogical aspect of information and communication technologies influence upon the educational space*. Retrieved from: <http://www.shsconferences.org/articles/shsconf/abs/2016/07/contents/contents.html/DOI:http://dx.doi.org/10.1051/shsconf/20162901027>
- Juola, P. (2008). Authorship attribution. Boston - Delft: Now Publishers Inc.
- Koppel, M., Schler, J., Argamon, Sh. (2010). *Authorship attribution in the wild Lang Resources & Evaluation*. Retrieved from: https://www.researchgate.net/publication/220147732_Authorship_attribution_in_the_wild / DOI 10.1007/s10579-009-9111-2
- Kozlova, E.S., Cherkasov, A.M., Makashova, V.N., Davletkireeva, L.Z. (2017). Prorektirovanie funktsional'nykh vozmozhnostei kursa sistemy distantsionnogo obucheniia vysshikh shkol s uchetom individual'noi traektorii obuchaiushchikhsia. *International Journal of Open Information Technologies*. V. 5, no. 4, 78. [in Rus.].
- Larner, S. (2014). *Forensic Authorship Analysis and the World Wide Web*. Hampshire, UK: Palgrave Macmillan.
- Larner, S. (2015). From intellectual challenges to established corpus techniques: introduction to the special issue on forensic linguistics. *Corpora*. V. 10, pp. 131-143. DOI: doi.org/10.3366/cor.2015.0071 Retrieved from: <http://www.eupublishing.com/doi/abs/10.3366/cor.2015.0071>
- Lomonosova, N.V. (2017). K voprosu ob ispol'zovanii sistemy smeshannogo obucheniia studentami vuzov. *TSPU Bulletin*. V. 5 (182). DOI: 10.23951/1609-624X-2017-5-122-126 [in Rus.].
- Moodle Docs. Browse features. Retrieved from: https://docs.moodle.org/34/en/Main_page
- Olsson, J., Luchjenbroers, J. (2014). *Forensic Linguistics*. London, New Delhi, New York, Sydney: Bloomsbury Academic.
- Open Technologies company. Retrieved from: <https://opentechnology.ru/products/russianmoodle> [in Rus.].
- Prigozhina, K.B., Trostina, K.V. (2017). Virtual'naia obrazovatel'naia sreda kak sredstvo povysheniia konkurentosposobnosti obrazovatel'nykh programm vuza. *Obrazovanie i nauka*, V. 19, no. 5, pp.166-188. DOI: 10.17853/1994-5639-2017-5-166-188 [in Rus.].
- Remchukova, E., Sokolova, T. (2016). *Formation of New Linguistic Competences in Educational Space: Naming Examination*. SHS Web of Conferences. V. 29. Retrieved from: http://www.shsconferences.org/articles/shsconf/abs/2016/07/shsconf_eeia2016/ DOI: <http://dx.doi.org/10.1051/shsconf/20162901057>
- Remchukova, E., Sokolova, T., Zamaletdinova, L. (2017). *Creative Naming in the Aspect of Teaching in the Informational Era*. Retrieved from: http://www.futureacademy.org.uk/files/images/upload/EEIA2017_FAF059.pdf DOI: <http://dx.doi.org/10.15405/epsbs.2017.08.59>
- Romanov, D.A., Romanova, M.L., Kiseleva, E.S., Bespalova, T.S. (2017). Sovremennye metody diagnostiki uchebno-informatsionnogo vzaimodeistviia. *Uchenye zapiski universiteta imeni P.F. Lesgafta*. V. 11 (153), pp. 208-211. [in Rus.].
- Schwartz, R., Tsur, O., Rappoport, A., Koppel, M. (2013). *Authorship Attribution of Micro-Messages / Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing*. Seattle, Washington, USA, 18-21 October 2013, pp. 1880–1891.
- Segarra, S., Eisen, M., Ribeiro, A. (2013). *Authorship attribution using function words adjacency networks / 2013 IEEE International Conference on Acoustics, Speech and Signal Processing*, Vancouver, BC,

2013, pp. 5563-5567. Retrieved from: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6638728&isnumber=6637585/DOI:10.1109/ICASSP.2013.6638728>
Sergeeva, M.G., Sokolova, N.L., Bodenko, N.N., Egorova, L.A., Mishatkina, M.V. (2017). Praktika rossiiskogo i zarubezhnogo upravleniia elektronnyim obucheniem. *Problemy sovremennogo pedagogicheskogo obrazovaniia*. V. 56-1, pp. 226-234. [in Rus.].
The Centre for Forensic Linguistics at Aston University. Retrieved from: <http://www.forensiclinguistics.net>