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21ST CENTURY CHANGES AND THE GROWING IMPORTANCE OF PROFESSIONAL ENGLISH PROFICIENCY

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Abstract: This paper examines the integration of data-driven and professionally oriented methods into economics education in Uzbekistan. It highlights the importance of analytical, predictive, and English-language competencies in preparing students for the digital economy. The study combines big data analysis, reality mining, and ESP (English for Specific Purposes) to improve learning outcomes. Experimental group results demonstrated higher performance compared to control groups, confirming the effectiveness of the proposed approach. The methodology also supports scalability across other disciplines, promoting broader implementation of differentiated, data-oriented education.

Key words: data collection, deep learning, reality mining, prediction methods, economics education, differentiated learning, ESP (English for Specific Purposes), vocational training.

Annotatsiya: Ushbu maqolada O'zbekiston iqtisodiy ta'limida ma'lumotlarga asoslangan va kasbiy yo'naltirilgan metodlarni integratsiyalash masalalari o'rganiladi. Tadqiqotda talabalarning analitik, prognozlash va ingliz tili kompetensiyalarini rivojlantirish orqali raqamli iqtisodiyotga tayyorlash muhimligi ta'kidlanadi. Big data tahlili, reality mining va ESP (kasbiy yo'nalishdagi ingliz tili) yondashuvlari o'quv jarayonining samaradorligini oshiradi. Eksperimental guruh natijalari nazorat guruhlariga nisbatan yuqori ko'rsatkichlarga ega bo'lgani taklif etilgan yondashuvning samaradorligini tasdiqlaydi. Metodika boshqa fanlarga ham kengaytirilishi mumkin bo'lib, differensial va ma'lumotlarga asoslangan ta'limni keng joriy etishga imkon beradi.

Kalit so'zlar: ma'lumot to'plash, deep learning, reality mining, prognozlash usullari, iqtisodiy ta'lim, differensial ta'lim, ESP (kasbiy ingliz tili), vokatsion tayyorgarlik.

Аннотация: В данной статье рассматривается интеграция методов, основанных на данных и профессиональной направленности, в экономическое образование Узбекистана. Подчеркивается важность аналитических, прогностических и английских языковых компетенций в подготовке студентов к цифровой экономике. Использование анализа больших данных, технологии reality mining и ESP (английский для профессиональных целей) повышает эффективность обучения. Результаты экспериментальной группы показали более высокие показатели по сравнению с контрольной группой, что подтверждает эффективность предложенного подхода. Методология может быть масштабирована и на другие дисциплины, что способствует широкому внедрению дифференцированного и ориентированного на данные образования.

Ключевые слова: сбор данных, deep learning, reality mining, методы прогнозирования, экономическое образование, дифференцированное обучение, ESP (английский для профессиональных целей), профессиональная подготовка.

INTRODUCTION

The 21st century has introduced rapid transformations in economics, technology, communication, and the labor market. Economic integration, digitalization, and international cooperation have led to a world where borders are less restrictive, and professional interaction increasingly takes place across cultures and countries. In such a dynamic global environment, English language proficiency has become a fundamental skill for future specialists, particularly for students pursuing economics. Over the past few years, Uzbekistan has undergone significant socio-economic reforms aimed at liberalizing and internationalizing the national economy. These developments have increased the need for highly qualified specialists in economics who not only possess strong theoretical knowledge but also demonstrate advanced analytical, digital, and predictive competencies.

In the era of data-driven economies, modern economists are expected to collect, analyze, and forecast economic trends based on large-scale datasets, applying deep learning and other advanced data-processing methods [6]. Although the current education system in Uzbekistan is being gradually modernized, traditional theory-centered approaches are still dominant. This situation indicates the need to strengthen students' readiness for a labor market that increasingly values data literacy, applied analytical skills, and digital competencies [3]. Therefore, the integration of data collection, reality mining, and AI-based prediction methods into differentiated professional education has become a timely and strategic requirement for improving the quality of economics education and developing globally competitive specialists.

LITERATURE REVIEW

Globalization, international academic mobility, and the widespread digital transformation have significantly influenced the role of English in professional training, particularly in economics and data-driven fields. According to Hutchinson and Waters (1987), English for Specific Purposes (ESP) emerged as a response to specialized communication needs in academia, technology, and international business, emphasizing relevance to students' professional goals through learner-centered language education. This shift highlights English not merely as a general communication tool but as an instrument for professional performance in rapidly evolving labor markets.

Dudley-Evans and St. John (1998) further argue that professional English proficiency integrates disciplinary concepts and linguistic skills, enabling learners to engage in domain-specific tasks such as academic writing, negotiation, data interpretation, and research communication. This makes ESP a bridge between theoretical content knowledge and real-world professional competence, especially in areas where innovation, policy-making, and market forecasting depend on evidence-based communication.

Contemporary studies also show increasing convergence of ESP with digital literacy and data sciences. LeCun, Bengio, and Hinton (2015) and Jordan & Mitchell (2015) emphasize the growing need for professionals who can understand machine learning outputs, interpret data models, and communicate results clearly. Within this context, Rakhimova (2022) demonstrates that technology-supported ESP instruction enhances knowledge access and student engagement in specialized coursework, providing broader access to scientific publications, AI-driven tools, and global datasets.

Furthermore, educational transformations in Uzbekistan—supported by modernization of higher education, curriculum reforms, and internationalization—have accelerated the demand for economists who possess both professional English proficiency and analytical competencies. UNICEF's sector analysis (Deepa Sankar, 2021) notes that students entering globalized labor markets require multidisciplinary skills, including digital forecasting, research communication, and predictive analytics.

Tomlinson (2014) and Nunan (2015) also advocate a differentiated, learner-centered approach to ESP instruction, emphasizing that professional English training should adapt to student needs, discipline-specific terminology, and applied communication tasks. This aligns with modern higher education goals, which seek not only linguistic fluency but also critical thinking, data-driven decision-making, and interdisciplinary collaboration.

In summary, the literature strongly affirms that professional English competency is no longer an auxiliary linguistic skill, but a core component of modern economic expertise, particularly in data-driven fields such as economic modeling, digital business, and global finance. Therefore, integrating ESP with analytical and predictive learning frameworks prepares students for effective participation in international scientific communities and competitive global labor markets.

RESEARCH METHODOLOGY

The modern global economy functions within a data-intensive environment in which information processing, prediction, and analytical modeling play a decisive role. This situation requires an educational paradigm that incorporates big data analytics, machine learning, and deep learning models to support decision-making processes in economics [7]. The collection of data from real business environments — including financial transactions, market behavior, and consumer sentiment — provides students with authentic datasets for practical analysis. The application of reality mining (the extraction of behavioral patterns from digital traces) enhances future economists' ability to interpret complex socio-economic systems, identify market dynamics, and understand consumer behavior [9].

In this context, the ESP (English for Specific Purposes) approach [4] remains an integral component of professional economic education, as English serves as the dominant language of international research, economic communication, and global data science discourse. Integrating English into economics curricula enables students to access international datasets, interpret AI-driven analytical frameworks, and communicate research findings professionally and persuasively [5].

The teaching methodology employed in the research combines data-oriented and language-integrated strategies. Core instructional components include:

- Data-driven project-based learning, in which students analyze economic trends using Python or Excel-based datasets;
- Differentiated learning, adapting analytical tasks and dataset complexity to individual student abilities in data interpretation and model development;
- Predictive modeling exercises, enabling students to forecast economic indicators based on real-world datasets;
- Integration of English terminology and professional discourse, focusing on economic analysis, artificial intelligence tools, and data science applications.

This blended methodology ensures the development of analytical, digital, and linguistic competencies required of globally competitive economists, supporting scalable application across other academic disciplines.

ANALYSIS AND RESULTS

The implementation of differentiated, data-oriented education within the economics curriculum of Uzbekistan has yielded several significant advantages [10]:

- Enhanced analytical literacy.

Students developed stronger skills in data interpretation and problem-solving through the use of real-world datasets and predictive algorithms.

- Application of deep learning methods.

Guided research projects enabled students to apply basic neural network models for economic forecasting and trend detection.

- Reality mining for practical understanding.

By analyzing digital traces from social media and online communication platforms, students gained valuable insights into market sentiment, consumer behavior, and behavioral economics.

- Improved employability.

Graduates equipped with competencies in data analytics and predictive modeling demonstrated higher competitiveness in both local and international labor markets.

- Integration with ESP.

The incorporation of English for Specific Purposes (ESP) facilitated students' ability to interpret international economic research, access global datasets, present results in academic forums, and collaborate in multinational projects.

- Prediction-oriented education.

Linking economic theory to real-time datasets and AI-based forecasting technologies helped students acquire essential skills for evaluating financial risks, predicting inflation rates, and anticipating market fluctuations in a digital economy.

- Adaptability and scalability.

The proposed methodology is applicable not only to economics but can also be adapted to other fields, including engineering, logistics, and public administration. This indicates its potential for wide-scale implementation of differentiated, data-driven education in Uzbekistan.

A structured methodology for developing professionally oriented reading skills in a foreign language among students with a basic introductory level can be summarized as follows:

1. Studying the curriculum of the selected field of specialization;
2. Conducting surveys among leading instructors and academically talented students;
3. Selecting foreign-language texts corresponding to major subjects, including specialized professional sources;
4. Organizing comprehensive instruction based on professional reading materials in the target language;
5. Assigning independent text-based tasks according to a structured plan during the assessment period;
6. Conducting peer-based review and correction of independent work.

The technologies applied in the experimental groups demonstrated a positive trend supported by assessment results. The outcomes achieved by students in the experimental groups were systematically compared with those of the control group. The average scores of the experimental group were higher than those of the control group, providing verifiable evidence of the functional effectiveness of the professionally oriented teaching methodology.

The indicators of learning outcomes and performance effectiveness are illustrated in the diagrams presented below.

CONCLUSION AND RECOMMENDATIONS

The integration of data collection, deep learning, reality mining, and prediction methods into the economics education system of Uzbekistan represents a transformative step toward modernizing higher education. This approach strengthens the connection between theoretical instruction and practical data analysis, thus preparing students to function effectively within the global digital economy [1]. Such integration not only enhances students' analytical proficiency but also supports the development of future specialists capable of making informed, data-driven decisions.

By introducing differentiated, professionally oriented, and technology-supported instruction, Uzbekistan can cultivate a new generation of economists who contribute to sustainable economic development and demonstrate advanced competencies in economic forecasting, risk assessment, and strategic planning. As the country continues its national digital transformation, data literacy and predictive modeling skills will become central to both academic excellence and professional success [11, 12].

The contemporary educational paradigm emphasizes individual learner development, viewing the student as an active participant in the learning process. This approach encourages the creation of a personalized educational trajectory tailored to specific abilities, professional interests, and learning needs. The development of a learner-centered framework is closely linked to the need for conditions that support student growth as an independent subject of education. Consequently, new dimensions of differentiated learning have emerged, particularly within economics education [13, 14].

A systematic review of scientific literature allowed the identification of didactic conditions that optimize students' theoretical and practical learning within differentiated instruction. These conditions include the individualization of educational content, variability in teaching methods, the use of multi-level tasks, reflective learning practices, and regular assessment procedures. The implementation of these pedagogical conditions not only supports effective acquisition of English for professional purposes, but also facilitates the personalization of the educational process, enabling students to master foreign-language economic communication in alignment with their academic and career goals.

REFERENCES

- Alpaydin, E. (2020). *Introduction to machine learning* (4th ed.). MIT Press.
- Basturkmen, H. (2010). *Developing courses in English for specific purposes*. Palgrave Macmillan.
- Deepa Sankar. (2021). Uzbekistan education sector analysis. UNICEF Uzbekistan. <https://www.unicef.org/uzbekistan/media/5526/file/Uzbekistan-Education-Sector-Analysis-2021.pdf>
- Dudley-Evans, T., & St. John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge University Press.
- Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learner-centered approach*. Cambridge University Press.
- Jordan, M.I., & Mitchell, T.M. (2015). Machine learning: Trends, perspectives, and prospects. *Science*, 349(6245), 255–260. <https://doi.org/10.1126/science.aaa8415>
- LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. *Nature*, 521(7553), 436–444. <https://doi.org/10.1038/nature14539>
- OECD. (2021). *Artificial intelligence, machine learning and big data in education: Policy guidance for OECD countries*. OECD Publishing. <https://doi.org/10.1787/bd3e2b45-en>
- Pentland, A. (2009). Reality mining of mobile communications: Toward a new deal on data. In *The Global Information Technology Report 2008–2009* (pp. 75–80). World Economic Forum. <https://doi.org/10.2139/ssrn.1418681>
- Rakhimova, Sh. U. (2022). Development of information and communication technologies as an opportunity for teaching foreign languages. *Mental Enlightenment Scientific-Methodological Journal*, 2022(1), 67–73. <https://mentaljournal-jspu.uz/index.php/mental/article/view/437>
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.
- Illeris, K. (2018). *Contemporary theories of learning: Learning theorists ... in their own words*. Routledge.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school*. National Academy Press.
- Nunan, D. (2015). *Teaching English to speakers of other languages: An introduction* (2nd ed.). Routledge.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Tomlinson, B. (2017). *Second language acquisition and task-based language teaching*. Wiley-Blackwell.

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