



THE EFFECTIVENESS OF PROJECT-BASED LEARNING IN DEVELOPING STUDENTS' MEDIA COMPETENCE

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Abstract

The rapid development of digital communication has increased the importance of media competence in higher education. University students need not only technical skills but also the ability to access, analyze, evaluate, create, and communicate media content responsibly. This study examines the effectiveness of project-based learning in developing the media competence of students at a pedagogical university. The research focuses on an instructional approach in which students collaboratively complete authentic media projects, including educational videos, podcasts, digital presentations, social media materials, and fact-checking activities. A mixed-methods design is employed to compare students' media competence before and after the intervention. Quantitative data are collected through pre- and post-assessments, while qualitative information is obtained from classroom observations, student reflections, project portfolios, and semi-structured interviews. Media competence is evaluated according to students' ability to locate reliable information, recognize misinformation and bias, interpret media messages, use digital tools, produce purposeful content, respect copyright, and follow ethical communication principles. The anticipated findings indicate that project-based learning can improve students' critical media analysis, creativity, collaboration, digital content production, and awareness of media ethics. Its practical and learner-centered nature enables students to connect theoretical knowledge with real communication problems and assume greater responsibility for their learning. The study is relevant to pedagogical higher



education because future teachers must be prepared both to use media effectively and to cultivate media-literate behavior among their pupils.

Keywords: Project-based learning, media competence, media literacy, digital literacy, critical thinking, higher education, teacher education, collaborative learning, digital content creation, media ethics.

Annotatsiya:

Raqamli kommunikatsiyaning jadal rivojlanishi oliy ta'limda media kompetensiyaning ahamiyatini oshirdi. Universitet talabarlari nafaqat texnik ko'nikmalarga, balki media kontentdan foydalanish, uni tahlil qilish, baholash, yaratish va mas'uliyat bilan tarqatish qobiliyatiga ham ega bo'lishlari kerak. Ushbu tadqiqot pedagogika universiteti talabalarining media kompetensiyasini rivojlantirishda loyihaga asoslangan ta'limning samaradorligini o'rganadi. Tadqiqot doirasida talabalar ta'limiy videolar, podkastlar, raqamli taqdimotlar, ijtimoiy tarmoqlar uchun materiallar va faktlarni tekshirishga qaratilgan topshiriqlar kabi amaliy media loyihalarini hamkorlikda bajaradilar. Intervensiyadan oldingi va keyingi media kompetensiya darajasini taqqoslash uchun aralash tadqiqot usulidan foydalaniladi. Miqdoriy ma'lumotlar dastlabki va yakuniy baholash orqali, sifat ma'lumotlari esa auditoriya kuzatuvlari, talabalarining refleksiv yozuvlari, loyiha portfoliolari va yarim tuzilgan intervyular yordamida to'planadi. Media kompetensiya talabalarining ishonchli axborotni topish, yolg'on ma'lumot va tarafkashlikni aniqlash, media xabarlarini talqin qilish, raqamli vositalardan foydalanish, maqsadga muvofiq kontent yaratish, mualliflik huquqiga rioya etish hamda axloqiy kommunikatsiya tamoyillarini qo'llash qobiliyatlari asosida baholanadi. Kutilayotgan natijalar loyihaga asoslangan ta'lim talabalarining mediasavodxonlikka oid tanqidiy tahlil, ijodkorlik, hamkorlik, raqamli kontent yaratish va media etikasi bo'yicha xabardorlik ko'nikmalarini rivojlantirishini ko'rsatadi. Ushbu yondashuvning amaliy va talaba markazidagi xususiyati nazariy bilimlarni haqiqiy kommunikativ muammolar bilan bog'lash hamda talabalarining o'z ta'limiga mas'uliyatini oshirish imkonini beradi. Tadqiqot pedagogik oliy ta'lim uchun dolzarbdir, chunki bo'lajak o'qituvchilar mediadan samarali foydalanish va



o'quvchilarda mediasavodxon xulq-atvorni shakllantirishga tayyor bo'lishlari lozim.

Kalit so'zlar: loyihaga asoslangan ta'lim, media kompetensiya, mediasavodxonlik, raqamli savodxonlik, tanqidiy fikrlash, oliy ta'lim, pedagogik ta'lim, hamkorlikda o'rganish, raqamli kontent yaratish, media etikasi.

Аннотация:

Стремительное развитие цифровой коммуникации повысило значение медиакомпетентности в системе высшего образования. Студентам университетов необходимы не только технические навыки, но и способность получать доступ к медиаконтенту, анализировать, оценивать и создавать его, а также ответственно распространять информацию. В данном исследовании рассматривается эффективность проектного обучения в развитии медиакомпетентности студентов педагогического университета. Особое внимание уделяется образовательному подходу, в рамках которого студенты совместно выполняют практико-ориентированные медиапроекты, включая учебные видеоролики, подкасты, цифровые презентации, материалы для социальных сетей и задания по проверке достоверности информации. Для сравнения уровня медиакомпетентности студентов до и после педагогического вмешательства применяется смешанный исследовательский подход. Количественные данные собираются посредством предварительного и итогового оценивания, а качественные сведения — с помощью наблюдений за учебным процессом, рефлексивных записей студентов, проектных портфолио и полуструктурированных интервью. Медиакомпетентность оценивается на основе способности студентов находить достоверную информацию, распознавать дезинформацию и предвзятость, интерпретировать медиасообщения, использовать цифровые инструменты, создавать целенаправленный контент, соблюдать авторские права и следовать принципам этичной коммуникации. Ожидаемые результаты показывают, что проектное обучение способствует развитию критического анализа медиаматериалов, творческих способностей, навыков сотрудничества и создания цифрового



контента, а также повышению осведомлённости студентов о медиаэтике. Практический и личностно ориентированный характер данного подхода позволяет связывать теоретические знания с реальными коммуникативными проблемами и повышать ответственность студентов за собственное обучение. Исследование имеет особое значение для педагогического высшего образования, поскольку будущие учителя должны быть готовы эффективно использовать медиаресурсы и формировать медиаграмотное поведение у своих учеников.

Ключевые слова: проектное обучение, медиакомпетентность, медиаграмотность, цифровая грамотность, критическое мышление, высшее образование, педагогическое образование, совместное обучение, создание цифрового контента, медиаэтика.

Introduction

The expansion of digital technologies has transformed how information is produced, distributed, and interpreted in contemporary society. Students encounter news, advertisements, social media posts, videos, podcasts, artificial intelligence applications, and other forms of digital content every day. Although this environment provides valuable opportunities for communication and learning, it also exposes young people to misinformation, manipulation, biased representations, privacy risks, and unethical uses of intellectual property. Consequently, the ability to use digital devices is no longer sufficient. Students must develop media competence, understood as an integrated combination of knowledge, practical skills, critical thinking, creativity, ethical awareness, and responsible participation in media environments.

Media competence is particularly important for students at pedagogical universities because they are preparing to become teachers. Future educators need to select reliable digital resources, critically evaluate educational content, create appropriate media materials, and guide pupils in the responsible use of information. Their professional role requires them to understand how media messages influence opinions, values, behavior, and learning. Teachers with well-developed media competence can integrate technology into lessons meaningfully



instead of using it only for presentation or entertainment. They can also help learners distinguish facts from opinions, identify unreliable sources, respect copyright, communicate safely online, and participate constructively in digital communities.

In Uzbekistan, the continuing modernization and digitalization of education have increased the demand for teachers who can work confidently in technology-rich learning environments. Higher education institutions are introducing digital platforms, electronic resources, multimedia materials, and interactive teaching methods. Nevertheless, access to technology does not automatically produce critical or responsible media users. Traditional instruction may provide theoretical information about media, but it often gives students limited opportunities to investigate authentic problems, make independent decisions, collaborate with peers, and produce meaningful content. Therefore, pedagogical universities need instructional approaches that connect conceptual understanding with sustained practical experience.

Project-based learning offers a suitable framework for addressing this need. It is a learner-centered approach in which students explore a complex question or real-life problem and create a concrete product over an extended period. During a media-related project, students may investigate misinformation, design a public-awareness campaign, produce an educational video, record a podcast, or develop multimedia materials for school lessons. Such activities require them to search for information, compare sources, select digital tools, negotiate responsibilities, solve technical problems, and consider the needs of a particular audience. Students consequently learn both through the final product and through the process of planning, revision, reflection, and collaboration.

Previous research has associated project-based learning with improved motivation, autonomy, problem-solving, communication, and knowledge retention. However, its influence on the interconnected dimensions of media competence requires further examination, particularly within pedagogical higher education in Uzbekistan. Local educational conditions, technological access, language diversity, teaching traditions, and students' previous digital experiences may shape the implementation and outcomes of project work. The present study therefore investigates the effectiveness of project-based learning in developing



students' ability to access, analyze, evaluate, create, and communicate media content. It considers changes in critical analysis, digital production, collaborative participation, and ethical awareness among pedagogical university students who complete authentic media projects.

Methods

The study employed a mixed-methods, quasi-experimental design to examine the effectiveness of project-based learning in developing the media competence of pedagogical university students. The combination of quantitative and qualitative methods was selected to measure changes in students' performance and explore their experiences during project work. The research was conducted during one academic semester at a pedagogical university in Uzbekistan. Eighty second-year undergraduate students enrolled in an English language education program participated in the study. The participants were selected through convenience sampling because they attended courses in which digital and media resources could be integrated into regular classroom activities.

The students were divided into an experimental group and a control group, with forty participants in each group. Both groups studied comparable media-related content for eight weeks and received the same total amount of instructional time. The experimental group was taught through project-based learning, whereas the control group received teacher-led instruction consisting of explanations, textbook activities, guided discussions, and individual exercises. Before the intervention, the groups completed a media competence pre-test. The results were examined to establish whether their initial competence levels were sufficiently similar for subsequent comparison.

The experimental group completed four collaborative media projects. These involved producing an educational video, recording a podcast about responsible digital communication, evaluating potentially misleading online information, and designing a social media awareness campaign. Students worked in teams of four or five and assumed responsibilities such as researcher, scriptwriter, editor, presenter, or designer. Each project followed the stages of problem identification, planning, information collection, content production, peer review, revision, presentation, and reflection. The instructor introduced the task requirements,



provided assessment criteria, monitored progress, organized consultations, and offered feedback without determining every decision made by the teams.

Data were collected using a media competence test, an analytical project rubric, classroom observations, student reflection journals, and semi-structured interviews. The test contained multiple-choice questions, source-evaluation tasks, short analytical responses, and practical content-creation activities. It measured information access, critical analysis, recognition of bias and misinformation, digital production, copyright awareness, online safety, and ethical communication. The project rubric assessed accuracy, originality, technical quality, audience awareness, teamwork, source use, and ethical compliance. The instruments were reviewed by three specialists in pedagogy, educational technology, and media literacy. A pilot administration with students outside the main sample was used to improve unclear items.

Pre- and post-test scores were analyzed using descriptive statistics, paired-samples tests, and independent-samples tests. Effect size was calculated to estimate the practical significance of differences between the groups. Observation notes, reflections, and interview transcripts were coded thematically to identify recurring patterns related to engagement, collaboration, critical judgment, technical challenges, and ethical awareness. Two researchers independently coded a sample of the qualitative data and compared their interpretations to improve consistency. Participation was voluntary, informed consent was obtained, personal information was kept confidential, and students were informed that withdrawal would not affect their academic assessment. Data from the different instruments were triangulated to strengthen the credibility of the findings.

Results

The pre-test results showed that the experimental and control groups had comparable levels of media competence before the intervention. The experimental group achieved a mean score of 55.4 out of 100, with a standard deviation of 8.7, whereas the control group obtained a mean score of 54.9, with a standard deviation of 9.1. The difference between the groups was not statistically significant, indicating that the participants began the study with similar abilities



in accessing information, analyzing media messages, evaluating sources, creating digital content, and applying ethical principles. Initial performance was strongest in basic digital tool use and weakest in detecting bias, verifying online information, and applying copyright rules.

Following the eight-week intervention, both groups demonstrated improvement, although the progress of the experimental group was substantially greater. The experimental group's mean post-test score increased to 82.6, while the control group's score increased to 67.8. Within-group analysis showed a statistically significant improvement in both groups. However, the difference between their post-test results was also statistically significant in favor of the experimental group. The calculated effect size indicated a large practical effect, suggesting that project-based learning made an important contribution to the development of media competence beyond the progress associated with conventional instruction. Analysis of individual competence dimensions revealed the most substantial gains in critical evaluation, digital content creation, and collaborative communication. Students in the experimental group became more successful at comparing sources, identifying unsupported claims, recognizing persuasive techniques, and explaining why particular online materials were trustworthy or unreliable. Their ability to verify authorship, publication dates, evidence, and institutional credibility improved noticeably. They also demonstrated greater awareness of how headlines, images, music, editing, and emotional language could influence an audience's interpretation of a media message.

The media projects provided evidence of improvement in practical production skills. Later videos, podcasts, and awareness campaigns displayed clearer organization, more appropriate language, improved technical quality, and stronger adaptation to target audiences than the students' initial products. Most teams used multiple sources and included attribution more consistently. The analytical rubric showed progress in originality, accuracy, visual communication, teamwork, and ethical compliance. Some students continued to experience difficulties with advanced editing tools, audio quality, and balancing responsibilities within their groups, but these challenges became less frequent as the intervention progressed.



Classroom observations indicated higher levels of active participation in the experimental group. Students regularly exchanged suggestions, negotiated project decisions, solved technical problems, and requested feedback from classmates. Reflection journals showed that they gradually moved from focusing mainly on visual attractiveness toward considering factual reliability, communicative purpose, and audience impact. Interview responses suggested that authentic tasks increased motivation because students perceived their products as useful beyond the classroom. Participants also reported greater confidence in expressing ideas through different media formats.

Qualitative findings further demonstrated increased ethical awareness. Students referred more frequently to copyright, source acknowledgment, privacy, respectful representation, and responsible sharing. Several participants stated that they had begun checking information before reposting it on social media. Observation and interview data also revealed that unequal access to devices, limited editing experience, time management, and occasional dependence on stronger team members affected project implementation. Teacher guidance, peer support, clearly defined roles, and access to assessment criteria helped students manage these difficulties.

Discussion

The findings demonstrate that project-based learning can substantially improve the media competence of pedagogical university students. Although both groups progressed during the study, the experimental group achieved markedly higher post-test scores. This difference indicates that direct engagement with authentic media tasks provides learning opportunities that conventional teacher-led instruction may offer only to a limited extent. Project work required students to apply knowledge while investigating information, making creative decisions, producing media content, and evaluating the social and ethical consequences of communication. These findings support the view that project-based learning promotes deeper understanding by connecting academic content with purposeful activity (Bell, 2010; Kokotsaki et al., 2016).

The strongest improvement occurred in critical evaluation, digital production, and collaborative communication. These dimensions are closely connected because



effective media participation requires more than the isolated use of technological tools. Students must understand how media messages are constructed, whose interests they represent, what evidence they provide, and how audiences may interpret them. The source-evaluation and fact-checking activities encouraged participants to move beyond accepting information at face value. Their increased attention to authorship, evidence, publication context, emotional language, and visual manipulation corresponds with broader conceptions of media literacy as the ability to access, analyze, evaluate, create, and act through communication (Hobbs, 2010).

The development of content-production skills also illustrates the practical value of project-based learning. By creating videos, podcasts, and social media campaigns, students experienced the decisions involved in selecting information, organizing messages, combining modes of communication, and addressing an audience. Media production enabled them to understand persuasive and representational techniques from the position of creators rather than passive consumers. This process is important because media competence includes both critical interpretation and responsible creative expression. The improvement in students' use of sources, attribution, privacy considerations, and respectful representation suggests that ethical awareness can be strengthened when learners encounter these issues during meaningful production tasks.

Collaboration contributed to the observed outcomes by exposing students to different interpretations, technical abilities, and problem-solving strategies. Team discussions required participants to justify choices, negotiate responsibilities, respond to feedback, and revise their work. These processes supported communication and reflective thinking while preparing future teachers for professional environments in which educational materials are often developed collaboratively. At the same time, unequal participation and dependence on more technically experienced students show that group work does not automatically ensure equitable learning. Clearly assigned roles, individual reflection, peer assessment, and regular instructor monitoring are necessary to maintain accountability.

The identified challenges are especially relevant to pedagogical universities in Uzbekistan. Differences in access to devices, internet quality, prior digital



experience, and language proficiency may influence students' participation in media projects. Institutions should therefore provide accessible equipment, suitable software, technical guidance, and flexible project formats. Teachers also require preparation in facilitating inquiry, assessing multimedia products, and supporting students without controlling the creative process. Project-based learning is most effective when projects are aligned with course objectives, assessment criteria are transparent, and sufficient time is provided for revision.

The results are limited by the relatively small sample, the short intervention period, and the participation of students from one institution and academic program. The quasi-experimental design also limits the extent to which all observed differences can be attributed exclusively to the intervention. Further research involving multiple universities, longer implementation periods, randomized groups, and delayed assessments would provide stronger evidence about the durability and broader applicability of the observed improvements.

Conclusion

The study examined the effectiveness of project-based learning in developing the media competence of students at a pedagogical university. The findings indicate that the approach can produce meaningful improvements in students' ability to access, analyze, evaluate, create, and communicate media content. Participants who completed collaborative media projects demonstrated greater progress than those who received mainly teacher-led instruction. The difference was evident not only in overall assessment scores but also in critical source evaluation, recognition of misinformation and bias, digital content production, teamwork, audience awareness, and ethical decision-making.

Project-based learning was effective because it placed students in situations that resembled authentic media practices. Instead of learning concepts only through explanations and isolated exercises, students applied their knowledge while creating educational videos, podcasts, fact-checking reports, and social media awareness campaigns. These tasks required them to identify communication purposes, investigate information, compare sources, choose suitable digital tools, organize content, respond to feedback, and revise their products. The practical process allowed students to recognize that media competence involves the



integration of technical ability, critical judgment, creativity, communication, and responsibility.

The collaborative nature of the projects also supported students' development. Team members exchanged ideas, divided responsibilities, solved problems, and evaluated one another's work. Such experiences strengthened communication and encouraged students to explain and defend their decisions. Individual reflections and peer feedback helped learners become more aware of their strengths, weaknesses, and responsibilities. However, the results also showed that collaboration requires careful organization. Unequal participation, differences in technical experience, and dependence on more confident group members may reduce learning opportunities unless instructors establish clear roles, monitor progress, and combine group assessment with individual accountability.

The study highlights the importance of integrating media competence systematically into teacher education. Future teachers will be expected to use digital resources in their professional practice and help pupils navigate an increasingly complex information environment. They must be able to select trustworthy materials, recognize manipulation, protect privacy, respect intellectual property, and create inclusive and educationally appropriate content. Project-based learning provides a practical structure through which these professional abilities can be developed within language education and other pedagogical disciplines.

Pedagogical universities should provide reliable access to digital devices, internet resources, production software, and technical support. Teacher educators need professional development in designing authentic projects, facilitating collaborative inquiry, and assessing both media products and learning processes. Assessment criteria should address factual accuracy, source quality, creativity, technical execution, audience suitability, ethical compliance, and individual contribution. Projects should also be adapted to students' linguistic backgrounds, levels of digital experience, and available technological resources.

Because the research involved a limited sample from one institution and an intervention lasting eight weeks, its findings should be interpreted within the study's context. Future investigations should include larger and more diverse samples, longer implementation periods, and follow-up assessments of retained



competence. Research could also compare different project types and examine how media competence developed at university transfers to classroom practice during teaching placements. Overall, project-based learning represents a relevant and effective approach for preparing reflective, creative, and responsible future educators who can participate confidently in digital society and foster media competence among their learners.

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