Innovative digital technologies in the pr-management specialists training for public administration bodies on the blended learning

Tecnologías digitales innovadoras en la formación de especialistas de gestión de relaciones públicas para organismos de la administración pública en el aprendizaje combinado

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Abstract

Objective. The paper examined the information digital technologies effectiveness in the PR-management specialists training for public administration bodies on the blended learning

model. The research methodology is based on a mixed-methods approach and a combination of qualitative and quantitative design to fully cover the use of digital technology in the training of professionals under martial law. Results. It has been demonstrated that through a combination of different digital technologies in the higher education institutions of Ukraine, depending on the stage of training and type of lesson, a flexible inclusive approach was used, making provision for the creation of common standards for teaching through digital technology. Innovative digital technologies were used depending on the stage of the educational process (communication and interaction; conducting lectures and seminars; transferring learning materials and exchanging them; digital content development; knowledge evaluation and academic performance rating). As the higher education institutions of Ukraine significantly improved the asynchronous learning models, the preparation level of both educators and students for the complete transition to asynchronous learning given the war was markedly higher. It is deemed that the flexible self-study model during the war ensures the general competencies development, however students have not mastered a sufficient level of professional practical competencies.

Keywords: digital technologies of higher education institutions, professionals training under crisis conditions, PR-management expert training, public administration.

Resumen

Objetivo. El documento examinó la eficacia de las tecnologías digitales de la información en la formación de especialistas en gestión de relaciones públicas para los órganos de la administración pública en el modelo de aprendizaje combinado asíncrono bajo la ley marcial. La metodología de investigación se basa en un enfoque de métodos mixtos y una combinación de diseño cualitativo y cuantitativo para cubrir completamente el uso de la tecnología digital en la formación de profesionales bajo la ley marcial. Resultados. Se ha demostrado que a través de una combinación de diferentes tecnologías digitales en las instituciones de educación superior de Ucrania, según la etapa de formación y el tipo de lección, se utilizó un enfoque inclusivo flexible, previendo la creación de estándares comunes para la enseñanza a través de medios digitales. tecnología. El modelo de aprendizaje asincrónico ha hecho posible que profesores y alumnos elijan el momento, el lugar de interacción y los métodos de aprendizaje. Se utilizaron tecnologías digitales innovadoras según la etapa del proceso educativo (comunicación e interacción; realización de conferencias y seminarios; transferencia e intercambio de materiales de aprendizaje; desarrollo de contenidos digitales; evaluación de conocimientos y calificación del rendimiento académico). A medida que las instituciones de educación superior de Ucrania mejoraron significativamente los modelos de aprendizaje asincrónico durante la pandemia, el nivel de preparación tanto de los educadores como de los estudiantes para la transición completa al aprendizaje asincrónico dada la guerra fue notablemente mayor. Se considera que el modelo de autoaprendizaje flexible durante la guerra asegura el desarrollo de competencias generales, sin embargo los estudiantes no han dominado un nivel suficiente de competencias prácticas profesionales. Por lo tanto, es necesario encontrar formas de desarrollar competencias profesionales en medio de la crisis y, por lo tanto, la selección de tecnologías digitales innovadoras y efectivas que contribuyan a la formación de habilidades prácticas de

los especialistas en gestión de relaciones públicas para los organismos de la administración pública.

Palabras clave: tecnologías digitales de instituciones de educación superior, formación de profesionales en condiciones de crisis, formación de expertos en gestión de relaciones públicas, administración pública.

1. Introduction

Under modern conditions, the training of PR- management experts for public administration bodies is carried out on the basis of the latest approaches, methods and tools. Innovative digital learning technologies are one of the training tools used by educators, which provides the possibility for the organization of asynchronous hybrid learning model, especially relevant during the period of martial law. Asynchronous learning style involves the use of different digital technologies for interaction between educators and students, learning strategies are based on a combination of digital technologies. Innovative strategies include solving the problem of effective communication, interaction, interactivity, and students' active involvement in the educational process. During the pandemic, the use of digital tools in the educational process increased considerably, and blended learning models were improved by integrating innovative digital tools (Goudeau et al., 2021). Therefore, Flexible and Inclusive Teaching models are emerging and evolving. Different technologies are combined here to deliver classes. These new strategies include learning scheduling based on hybrid, virtual, personalized courses developed by management.

The aim of the article was to assess the efficiency of information digital technologies in training PR-management experts for public administration bodies on the asynchronous blended learning model under martial law.

2. Literature review

Innovative Digital Technology in the Training of Public Administration Professionals

The effects, benefits, and results of using digital technology in the training of professionals are actively discussed in the literature. Through the review of theoretical and empirical research, the main digital tools used in teaching activities were classified and highlighted:

1) digital technologies of information presentation;
2) digital technologies of educational process management, including communication, student involvement in debate, discussion, teamwork, assessment, monitoring and knowledge checks;
3) digital technologies of teachers' technical support; 4) digital technologies.

Innovative digital technologies also provide centralized technical support for faculty using a suite of digital tools during lectures, seminars, discussions, and student group

collaboration (Bao, 2020). ICTs facilitate the integration of active learning strategies, in particular, the active use of learning platforms, online services (Student response systems' (SRS), social media, video conferencing technologies. The common technologies used by educators include a website based on the most widely applied learning management system (LMS) (Google Class and Edmodo), while video conferencing is the second most powerful and frequent tool (Zoom and Skype).

These digital media contribute to the implementation of active learning strategies. The effectiveness of digital technologies is to increase students' motivation, interactivity, and engagement, contributes to the productivity of this performance through the ability to tailor courses to students' interests (Kopcha et al., 2016; Subhash & Cudney, 2018).

The introduction of technology affects the teaching strategy. Depending on the type of digital tool and its use in a particular learning context, it corresponds to the current and strategic learning activities and actions of the educator. For instance, the use of presenting information technologies will indicate a digital content oriented learning strategy and the transfer of knowledge from an educator to a pupil, a student. The use of technology to engage pupils and students in debate, discussion, teamwork, for knowledge checks means implementing student-centered knowledge generation strategies (individual centered strategies and conclusion formation) (Kirkwood & Price, 2013). Therefore, it is important for educators to perceive the use of technology as a part of student-centered learning to obtain better learning results (Kim et al., 2013).

Asynchronous blended learning model

The asynchronous blended learning model is one of the hybrid learning models that flourished in the 2000s (Graham, 2009; Graham, 2013). Blended learning includes any combination of methods, including common educational practices of face-to-face instruction with asynchronous or synchronous learning styles using technology (Zhang et al, 2021). Synonymous with blended learning is hybrid learning using digital technologies (Dang et al., 2016). Digital technology is used as a strategic tool to ensure unrestricted access to learning materials and improve student performance.

With the onset of the pandemic, innovative digital technologies have made asynchronous learning styles one of the predominant styles in different higher education institutions, contributing to institutional transformation. Despite trends in the growing role of various blended learning models, higher education institutions still need to improve concepts, theories, and practices in this context (Graham, 2018).

Hybrid learning involves a combination of face-to-face (traditional teaching) and digital learning formats, a convergence of two archetypal environments of learning activities: traditional face-to-face (F2F) and technology-mediated environments (Graham, 2009). Blended learning also involves a combination of various methods, pedagogical approaches, and technologies (Smith & Hill, 2019; Hrastinski, 2019). Blended learning

models are a form of distance learning, in particular the following types of the latter have been identified in the literature (Tirziu & Vrabie, 2015; Thai, De Wever & Valcke, 2017; Asarta & Schmidt, 2020; Ożadowicz, 2020). Among the latter there are conservative traditional face to face courses (f2f), supplemented with digital technologies and tools for knowledge transfer and assessment (Power Point or Prezi presentations, online tests, quizzes). Hybrid (blended) models, combining various types of online learning, offline traditional courses with possible student access to virtual sessions based on learning management systems can also be found there. The asynchronous learning model is a form of hybrid learning, which involves interaction between participants in the educational process based on group and individual activities, an active approach to learning activities. Flipped classroom (FC) is the most innovative blended learning model (BL), which allows students to access learning materials, technical content offline at any time through virtual platforms, exchange through cloud services, online learning management systems (LMS). Traditional lectures in this model are replaced by classroom meetings organized in the form of discussions, brainstorming on problem solving in the presence of the teacher/mentor.

Hrastinski (2019) defines hybrid learning models, which include the asynchronous (flexible) model of content transfer, knowledge through an online environment on an individualized student schedule. Hrastinski (2019) also identifies models such as:

1) the community of inquiry framework involves the cognitive, instructional, social presence of researchers as the foundation of learning;
2) the rotation model involves alternating teaching methods (online, group or individual projects, classroom-based learning);
3) the self study mixed model – in addition to traditional courses students can also take one or more courses by choice;
4) the extended virtual model – students can allocate time to participate in courses and distance learning online.

Petronzi & Petronzi (2020) explore innovative blended learning models, distinguishing between synchronous and asynchronous (flexible, autonomous) styles that interact between the main actors of the educational process in higher education institutions. Mentioning 'synchronous', Petronzi & Petronzi (2020) refer to a learning environment in which students are in the same place (Internet, campus) at the same time with access to the same materials. Asynchronous refers to flexible, autonomos learning by students using digital technology.

3. Methodology

The research is based on a qualitative and quantitative assessment (Papastylianou & Alyfantis, 2021) of the effectiveness of using innovative digital technologies in the training of public administration professionals. Qualitative assessment involved the analysis of the educational process of training specialists, their competencies in the higher education institutions of Ukraine that offer educational training programs for specialists in public

administration and management. For the qualitative analysis we have used educational programs in the field of knowledge "Public Administration and Management" and working programs of the training discipline "PR-technologies and communications in public administration" of the leading higher education institutions of Ukraine according to the rating of the Center for International Projects "Euro Education" and international expert group IREG Observatory on Academic and Excellence (the sixteenth academic rating of Ukrainian higher education institutions Top 200 Ukraine 2022) (Ministry of Education and Science of Ukraine, 2022). Content analysis of educational training programs and work programs of academic discipline allowed to form the main competences of specialists. These competences were further included in the quantitative assessment by students to identify the perception of their competencies development level during the period of training under martial law. The content analysis also made it possible to reveal the most common innovative digital technologies used by higher education institutions during martial law and to determine students' perception of such technologies.

Quantitative assessment of the effectiveness of the use of innovative digital technologies in the training of specialists in public administration is based on the method of structured interviews of selected students for qualitative analysis of higher education institutions training programs. For this purpose, using the Google Form, a questionnaire was formed that included questions on:

1) the types of digital information technologies used by higher education institutions for communication and interaction processes, lectures and seminar sessions, transfer of training materials, materials exchange, assessment and knowledge checks;
2) students' perception of their own competencies level acquired in training using the asynchronous blended learning model under martial law. Web questionnaires were sent out to 120 students who participated in the course "PR-technologies and communications in public administration" of the leading higher education institutions of Ukraine". The survey was conducted in June 2022.

A questionnaire adapted from previous studies (Raven & Park, 2015) was used to conduct the survey. The questionnaire includes characteristics (constructs) of learning technologies to assess their quality and effectiveness. Specifically, the effectiveness of digital technologies depended on the following characteristics:

1) students' prior experience in digital technologies;
2) technology characteristics of lectures and seminars held with various types of digital technologies;
3) perceived usefulness;
4) perceived ease of use of technologies;
5) attitudes toward digital technologies as tools for developing competencies under martial law.

Students rated each construct on a scale of 1–5, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Previous experiences were also rated on a scale of 1–5, where 1 is low, 5 is high.

Table 1.
Characteristics (constructs) of students' performance in using digital technology

Constructs	Measures
Prior Experience	Please evaluate your digital experience before taking the PR Technology and Communications in Public Administration course
Technology Characteristics	The content of the video lectures, seminars is accurate. The content of the video lectures, seminars is accurate. The content of the video lectures and seminars is concise and relevant. The content of the video lectures and seminars is clear
Perceived Usefulness	I believe that the use of video lectures, tutorials, and seminars conducted has improved my performance in the course. I believe that the use of video lectures of learning materials, tutorials and the seminars conducted have improved my performance in the course. I believe that the use of video lectures of study materials and the seminars conducted made it easier to do homework. In general, I find the video lectures, training materials, and seminars conducted useful for my future activities
Perceived Ease of Use	It was easy to access the video lectures and register for the seminar to attend it. It was easy for me to watch the video lectures and materials presented at the seminars. My interactions with the video (e. g., play/pause, forward/backward) were clear and understandable
Attitude	In my opinion the most effective way is to use video lectures, video seminars and teaching materials at the same time. I believe that the course in general contributed to the development of general competencies (communication, search, processing and analysis of information; cooperation in a team and autonomously; use of information and communication technologies) I feel that taking the course in general contributed to the development of professional (vocational) competencies: a) communication with representatives of other professional groups at different levels; b) organizing and conducting communication events that promote public relations (press conferences, presentations, briefings, round tables, etc.); c) the ability to conclude relevant information documents; d) ensuring readability and proper audio perception of prepared PR texts with the help of special professional tools; e) development of image strategies and tactics to create an image of the organization, the person; f) identification and assessment of the image qualities of a person (individual, leader, politician, manager); g) study of the image demands of different population groups; explanation of the image management principles; h) modeling and justifying one's own opinion on the methodology of building an image; i) creating a positive image of the institution, organization, firm, enterprise in the Internet space

Source: designed by the author using the basic characteristics of digital technologies developed in Park et al., (2018).

4. Results

Analysis of educational programs for training specialists in public administration and management

The curricula of Ukrainian higher education institutions provide education, the formation of professional skills of public administration specialists in accordance with the requirements of employers and critical skills needed in future career development. Training is based on a combination of problem-based and student-centered approaches to learning; blended learning technologies; lectures, practical and seminar classes, laboratory work; coursework; field trips to government and local authorities; creative works and assignments in the form of home-tests, calculation assignment and papers; performing case-study, project activities, business games, academic "round tables".

Training of specialists in PR-management involves the passage of training courses integrated into the educational and professional programs "administrative management" in the field of knowledge, specialty of public administration and management. The study discipline is characterized by the following indicators: the number of credits – 4, the total number of hours. – 120, 2 modules, 20 hours of lectures and 20 hours of seminars. The PR-technologies and communications in public administration course is a separate academic discipline of educational programs for training specialists in public administration. Through the training of this discipline, specialists have to form professional (vocational) competence directly related to PR-management. Among these competences, there is the ability to establish social interaction, cooperation. Furthermore, it is crucial to develop the ability to organize information and analytical support of management processes using information technology and resources (in particular the development of measures to implement electronic government) and the ability to use digital and smart technologies. The last but not least important is the ability to represent public administration bodies in relations with other state bodies, local self-government bodies, public associations, organizations, enterprises, institutions regardless of ownership, and citizens, to establish effective communication with them. Therefore, in the training of public relations management specialists, it is important to cultivate competencies to use digital technology in order to effectively communicate with different stakeholders. After completing the course, students should form general and professional competencies (Table 2), in particular, among the general, the ability of autonomy and teamwork, the use of digital technology are worth noting. Professional competencies are highly specialized and form the skills of the future specialist in PR-management.

The purpose of teaching the discipline of PR-technology is to familiarize students with the history of formation and development of public relations, leading PR-technologies in various activities of modern society; forming their skills and abilities to organize effective public relations institution, enterprise, firm, as well as holding various PR-actions; ensuring their mastery of professional tools PR-textualist.

Under martial law, higher education institutions have predominantly set up flexible blended learning models. The interaction phases during lectures and seminars have been asynchronous due to the different locations of students. For the safety of students, the administration of higher education institutions provided teaching and learning opportunities at any convenient time for most students. Not only seminars, but also lectures were conducted asynchronously: video lectures and seminars were uploaded to the Learning Management System (LMS) Moodle for students to work through independently.

Table 2.
The main abilities (competences) of students after taking the discipline

Ability (competence)	Essence
Common	communicate in the state language both orally and in writing; search, process and analyze information from different sources; identify, set and resolve problems; cooperate in a team and autonomously; use information and communication technologies
Professional (vocational)	communication with representatives of other professional groups of different levels (with experts from other branches of knowledge/types of economic activity); organizing and conducting communication events that promote public relations (press conferences, presentations, briefings, round tables, etc.); ability to conclude relevant information documents: press releases, press bulletins, backgrouds, case histories, fact sheets, editions and other materials for publication in the press, greetings, etc.; ensuring readability and proper audio perception of prepared PR texts with the help of special professional tools; development of image strategies and tactics for creating an image of an organization, person; identification and assessment of the image qualities of a person (individual, leader, politician, manager); study of image requests from different population groups; explanation of image management principles; modeling and justification of one's own opinion on the methodology of building an image; creating a positive style of the institution, organization, company, enterprise in the web space

*Source: systematized by the author based on.*

The organization process of the lectures included presentation of materials to students through LMS Moodle in the form of presentations, videos, references and resources where learning materials are located. Various digital technologies were used at each stage of the lecture organization. At the presentation stage of lecture materials educators used LMS Moodle and Panopto software, which allows to record a lecture and place it on LMS Moodle. At the discussion stage of lecture materials, Telegram, Viber, Microsoft Teams programs were used, where students could ask questions and discuss homework posted on LMS Moodle for each lecture in real time after processing each lecture. In order to maintain effective communication processes educators were adjusted through programs Telegram, Viber, Microsoft Teams. Moreover, educators were advised to use Canvas templates to develop presentations of lecture materials and digital content.
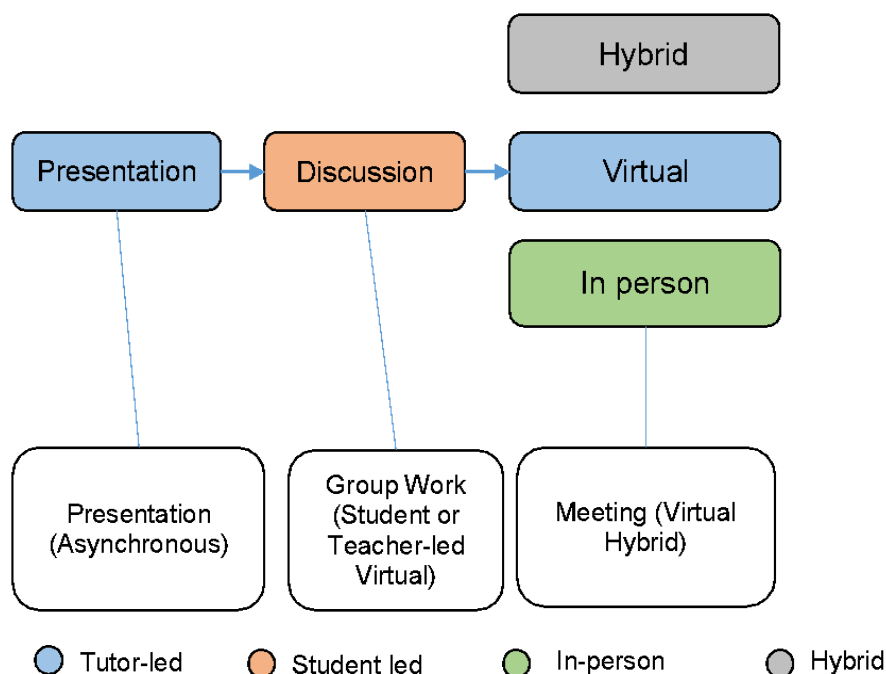
Figure 1. The process of lecture arrangement during martial law
Source: compiled by the author.

In the higher education institutions of Ukraine in general, educators were offered standard digital technology as part of asynchronous blended learning. Technical support for educators was provided using the FIT Canvas resource. The administration of higher education institutions offered educators to use Canvas templates to create presentations, which were perceived by students as the most interactive tools in teaching and learning lecture materials. In this way, the higher education institutions provided a teaching unification. At the same time, by combining different digital technologies depending on the stage of learning and the type of class, a flexible inclusive approach was used, providing for the creation of common teaching standards through the digital technologies used in teaching, supplemented by the ability of educators and students to choose the time, place of interaction, teaching methods.

The process of organizing seminars within the framework of the course is also based on a flexible, inclusive approach, asynchronous learning. For seminars the instructors used Microsoft Teams and Panopto software, which allows students to view video seminars asynchronously and to download them via other digital technologies. Video seminars created through Panopto could be integrated into LMS Moodle. At the stage of the actual seminar in a hybrid or virtual environment, Microsoft Teams program was mainly used; at the stages of discussing the results of seminars, discussions, assigning homework – programs, Telegram, Viber, Microsoft Teams.
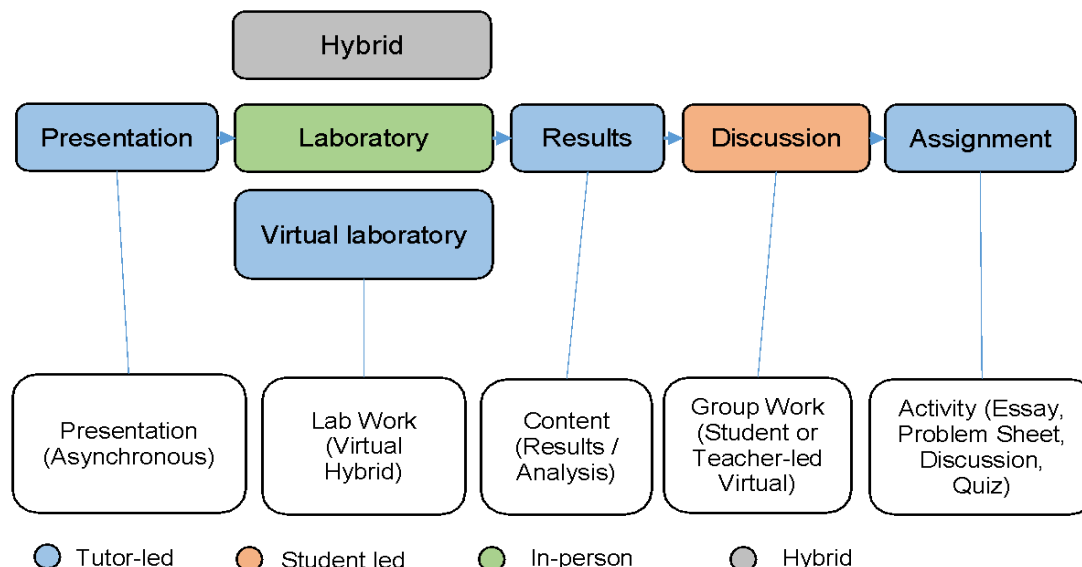
Figure 2. Seminar organizational process according to the asynchronous blended learning model during martial law
Source: compiled by the author.

The main innovative digital technologies used by teachers in the process of teaching the educational subject:

1) for communication and cooperation processes: Telegram, Viber, Microsoft Teams;
2) for lectures and seminars: LMS Moodle, Microsoft Teams;
3) for the teaching materials transfer, exchange of materials: LMS Moodle, lecture material or seminars video recording with program Panopto, which allows asynchronous viewing of video recorded by the educator during a lecture, seminar and uploaded to the LMS; for the digital content development application Canvas, which contains templates for presentations of materials;
4) to assess and check knowledge: LMS Moodle.

As the higher education institutions of Ukraine have improved asynchronous learning models significantly during the pandemic, the preparation level of educators and students for a full transition to asynchronous learning under war conditions has been noticeably improved.

Evaluating the effectiveness of innovative digital technologies in the training of public administration professionals

Students' evaluations of digital technology perception revealed that 8 % used technology to some extent, 50 % used technology frequently in education, and 42 % were regular users of technology (Table 3).

The assessment of technological characteristics of multimedia by students shows that most students agree with the relevance of video lectures and seminars (a score of 4–5 was given by 70 % of students), the accuracy, conciseness, relevance of lecture materials, seminars (a score of 4–5 was given by 65 % of students), the understandability of lectures, seminars (a score of 4–5 was given by 58 % of students).

Table 3.
Distribution of students' responses to digital technology use experience, technology characteristics, perceived usefulness, ease of use, %

Constructs	Measures	Estimation				
		1	2	3	4	5
Prior Experience	Please evaluate your digital experience before taking the PR Technology and Communications in Public Administration course	0 %	0 %	8 %	50 %	42 %
Technology Characteristics	The content of the video lectures, seminars is relevant	0 %	9 %	22 %	38 %	32 %
	The content of the video lectures and seminars is accurate, concise, and relevant	4 %	8 %	23 %	46 %	19 %
	The content of the video lectures and seminars is clear	9 %	12 %	22 %	35 %	23 %
Perceived Usefulness	I believe that the use of video lectures, learning materials and seminars conducted have improved my academic performance in the course	14 %	18 %	24 %	32 %	12 %
	I believe that the use of video lectures of training materials and the seminars conducted have increased my effectiveness in the course	12 %	21 %	30 %	18 %	20 %
	I believe that the use of video lectures of study materials and the seminars conducted made it easier to do homework	9 %	20 %	28 %	19 %	23 %
	In general, I find the video lectures, training materials, and seminars conducted useful for my future activities	8 %	14 %	33 %	27 %	19 %
Perceived Ease of Use	It was easy to access the video lectures and register for the seminar to attend it	2 %	4 %	6 %	21 %	68 %
	It was easy for me to watch the video lectures and materials presented at the seminars	4 %	7 %	18 %	30 %	42 %
	My interactions with the video (e. g., play/pause, forward/backward) were clear and understandable	1 %	3 %	8 %	19 %	69 %

Source: estimated by the author.

Among the respondents 44 % consider that the use of video lectures, learning materials and seminars conducted improved their progress in the course, 32 % disagreed and 24 % were neutral about the statement. 38 % of students believe the use of video lectures, tutorials, and seminars conducted are a tool to enhance their own performance, 33 % disagree with the effectiveness of digital technology, and 30 % are neutral on this statement. 46 % of students surveyed believe that video lectures, learning materials, and conducted seminars are useful for future activities, 22 % disagree, and 33 % are neutral on this statement.

The assessed level of perceived ease of use of video lectures, passing seminars in online learning also varies. 68 % rated a high level of ease of access to videos and seminars. 42 % indicated ease of viewing videos and materials presented during seminars. 69 % indicated a high level of interaction, clarity, and comprehensibility.

Students' attitudes toward lectures, video seminars, and study materials are generally effective (76 % gave a grade of 4–5) (Table 4). At the same time, the attitude towards the acquired competences in the conditions of asynchronous learning during the martial law significantly differs. 9 % of students noted that taking the course did not contribute to the development of general competencies, 15 % assessed the impact of the course on the development of abilities neutrally, while the majority of students noted the effectiveness of the course in the development of general competencies (76 %). The assessment of the development of professional competencies was different, because under martial law it was impossible to conduct practical training activities, in particular activities to communicate with representatives of other professional groups of different levels or to conduct communicative activities that promote public relations. Accordingly, the assessment of the positive impact of the course on practical skills was generally negative. 5 % of students noted that the course in general contributed to the development of competence of communication with representatives of other professional groups of different levels; 8 % of students noted the formation of competence of organizing and conducting communication events; 46 % of students noted the development of the ability to prepare relevant information documents; 43 % noted the formation of the ability to ensure readability and proper audio perception of prepared PR texts with the help of special professional tools; 43 % noted the development of knowledge in the development of image strategies and tactics to create an image of the organization, person; 58 % of students noted that the course helped to develop the ability to study the image requests of different population groups, an explanation of the principles of image management; 68 % developed the ability to model and justify their own opinion on the method of building an image; 58 % increased the ability to create a positive style of the institution, organization, company in the web space.

Table 4.
Students' attitudes toward the effectiveness of different formats of asynchronous learning, competency development during blended learning

Constructs	Measures	Estimation				
		1	2	3	4	5
Attitude	In my opinion the most effective way is to use video lectures, video seminars and teaching materials at the same time	4 %	8 %	13 %	37 %	39 %
	I believe that the course in general contributed to the development of general competencies (communication, search, processing and analysis of information; cooperation in a team and autonomously; use of information and communication technologies)	3 %	6 %	15 %	37 %	39 %
	I feel that taking the course in general contributed to the development of professional (vocational) competencies:					
	a) communication with representatives of other professional groups at different levels;	38 %	30 %	28 %	3 %	2 %
	b) organizing and conducting communication events that promote public relations (press conferences, presentations, briefings, round tables, etc.);	41 %	39 %	13 %	5 %	3 %
	c) the ability to conclude relevant information documents;	8 %	15 %	32 %	36 %	10 %
	d) ensuring readability and proper audio perception of prepared PR texts with the help of special professional tools;	9 %	19 %	29 %	28 %	15 %
	e) development of image strategies and tactics to create an image of the organization, the person;	11 %	20 %	27 %	26 %	17 %
	f) identification and assessment of the image qualities of a person (individual, leader, politician, manager);	5 %	7 %	20 %	35 %	33 %
	g) study of the image demands of different population groups; explanation of the image management principles;	9 %	12 %	22 %	32 %	26 %
	h) modeling and justifying one's own opinion on the methodology of building an image;	8 %	9 %	15 %	30 %	38 %
	i) creating a positive image of the institution, organization, firm, enterprise in the Internet space.	10 %	13 %	19 %	30 %	28 %

Source: estimated by the author.

5. Discussion

This study reveals the effectiveness of innovative digital technologies in the training of public administration and management professionals under martial law. Higher education institutions were forced to create conditions for a complete transition to an asynchronous blended learning model. Given the high level of technology use in higher education institutions during the pandemic, the study found a high level of user experience in the use of technology in training. At the same time, due to martial law, students were deprived of the opportunity to develop practical competencies, in particular communication skills, communication with representatives of other professional groups of different levels or conducting communication activities that promote public relations, most important for PR managers. Therefore, most assessments of skill development were assessed neutrally or negatively by students. Similar findings are also found in De Guzman (2020), where students in the College of Business and Public Administration expressed neutral views of skill development, abilities during instruction. De Guzman (2020) noted a lack of readiness for the synchronous mode of teaching students, requiring the college to find additional ways to teach in the event of an emergency. This study found a high level of user experience and readiness for asynchronous instruction. Harris & Nikitenko (2014) also found a high level of readiness of public administration students for online learning. Harris & Nikitenko (2014) explain the success of asynchronous technology-based learning in an online environment by the Theory of Self-Directed Learning (SDL) and the Theory of Self-Regulated Learning (SRL). This view is also expressed in Umek et al., (2015), "e-learning requires high student self-regulation and independence or their e-learning effectiveness may be low".

To improve the asynchronous learning model under martial law, it is appropriate to (Selvanathan, Hussin & Azazi, 2020): review current programs; establish clear goals and expected program outcomes; identify training methods and activities that can be organized online to develop practical competencies for PR managers; determine organization and presentation of activities, identify training material for each activity; select appropriate assessment models; identify skills and other requirements for access and establish requirements related to resources and infrastructure.

6. Conclusion

Through a combination of different digital technologies, a flexible, inclusive approach was used in higher education institutions of Ukraine, depending on the stage of learning and the type of class, providing for the creation of common standards of teaching through digital technologies. The asynchronous learning model provided the opportunity for teachers and students to choose the time, place of interaction, and teaching methods. Innovative digital technologies were used depending on the stage of the learning process (communication and interaction; conducting lectures and seminars; transfer of learning materials, exchange of materials; development of digital content; assessment and control of knowledge). Since the Ukrainian higher education institutions have improved asynchronous learning models remarkably during the pandemic, the preparedness level

of educators and students for the full transition to asynchronous learning under martial law was significantly higher.

It was stated that during the war the flexible self-study model provided the development of general competencies, however students have not mastered a sufficient level of professional practical competencies. Thus, there is an urge to search for ways to develop professional competencies in a crisis, and therefore the selection of effective innovative digital technologies that will contribute to the formation of practical abilities of specialists in PR-management for public administration bodies.

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