THE APPLICATION OF BLENDED LEARNING TECHNOLOGY IN THE DEVELOPMENT OF TECHNOLOGICAL CULTURE OF MASTERS OF INDUSTRIAL TRAINING OF AGRARIAN PROFILE


In the article, to justify the characteristics of implementing the technology of blended learning in the development of the technological culture of masters of industrial training of an agrarian profile on the basis of training and methodical centers of VET, an analysis of psychological-pedagogical and methodological literature, scientific sources, educational and methodological materials, experience of upgrading the qualifications of masters of industrial training of an agrarian profile is carried out. It was determined that the term “blended learning technology” has acquired a generalized meaning and includes various forms of combining traditional learning with the capabilities of modern information technologies. Attention is drawn to the fact that thanks to the introduction of blended learning technologies, the masters of industrial training are able to implement their own trajectories of the development of technological culture in accordance with individual requests and needs. It was established that the effectiveness of the organization of the educational process regarding the development of the technological culture of the masters of industrial training of the agrarian profile according to the flex model largely depends on the set of applied andragogic and acmeological technologies, namely: project technology, pedagogical coaching, technology of scientific and methodological support. The application of the rotation model and the flex model in the construction of the educational process regarding the development of the technological culture of the masters of industrial training of the agrarian profile in the educational and methodical centers of VET is characterized. It is proved that the application of blended learning...

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technology enables the development of the technological culture of masters of industrial training of an agrarian profile in educational and methodological centers of VET through various types of activities, provides the creation of cultural examples of their own professional experience, the formation of teamwork skills, solving professional and pedagogical problems, critical analysis of the obtained results, assessment of self-development in the context of the introduction of pedagogical, industrial and information and communication technologies into the educational process of vocational(vocational and technical) education institutions.

Key words: blended learning, technology, technological culture, Master of Industrial Training, agrarian profile, institution vocational education and training, educational and methodical (scientific and methodical) center of of vocational education and training.

Introduction of the issue. Innovative transformations in the system of professional education and rapid technological changes in agricultural production lead to the need for the organization of purposeful development of the technological culture of masters of industrial training of an agrarian profile with the aim of forming in them the ability to quickly adapt to rapidly changing
conditions, to rebuild their professional and pedagogical activities taking into account social and economic requests of society.

Improving the qualifications of masters of production training of an agrarian profile is situated at the intersection of two spheres: the sphere of professional activity and the sphere of education. In the conditions of the development of the information society, the entire pedagogical community is directed to an intensive search for such forms of organization of the educational process that would ensure the right balance between the best traditional methods and new forms and methods of learning based on information and digital technologies. In this context, the technology of blended learning, which provides for a flexible combination of the accessibility and convenience of distance learning with the advantages of the traditional educational process, is becoming widespread.

**Current state of the issue.** The development of the professional, technological culture of pedagogical workers of VET institutions was studied by H. Basargina, V. Kovalchuk, L. Komisarova, V. Kuznetsov, M. Mykhnii, V. Oliinyk, N. Samoilenko, Z. Turyanitsa, O. Shamralyuk, L. Shevchuk, O. Shcherbak and others.


Blended and distance learning technologies became the subject of scientific investigations by O. Bazelyuk, D. Humenny, R. Gurevich, M. Kadmia, M. Prygodiya, L. Romanov and others.

However, despite the importance of the conducted research on the professional improvement of teachers of VET institutions, the scientific and methodological support of the application of blended learning technology in the development of the technological culture of masters of industrial training of an agrarian profile needs to be studied and substantiated.

**The aim of research** is to substantiate the theoretical and methodological basis of the qualification of masters of production training of an agrarian profile, to rebuild their professional and pedagogical activities taking into account social and economic requests of society.

Підвищення кваліфікації майстрів виробничого навчання аграрного профілю знаходиться на перетині двох сфер: сфери професійної діяльності та сфери освіти. В умовах розвитку інформаційного суспільства вся педагогічна спільнота спрямована на інтенсивний пошук таких форм організації освітнього процесу, які б забезпечували правильний баланс між кращими традиційними методиками та новими формами і методами навчання, що ґрунтуються на інформаційно-цифрових технологіях. У цьому контексті масово поширення набуває технологія змішаного навчання, яка передбачає гнучке поєднання доступності та зручності дистанційного навчання із перевагами традиційного освітнього процесу.

**Аналіз останніх джерел і публікацій.** Розвиток професійної, технологічної культури педагогічних працівників закладів П(ПТ)О досліджували Г. Басаргіна, В. Ковальчук, Л. Комісарова, В. Кузнецова, М. Михнюк, В. Олійник, Н. Самойленко, З. Туряниця, О. Шамраюк, Л. Шевчук, О. Щербак та ін.

Упровадженню інноваційних педагогічних технологій у підготовку педагогів закладів професійної (професійно-технічної) освіти присвячені праці М. Артюшини, О. Герганови, Т. Германда, О. Кошука, Н. Куалаєвої, С. Масліч, В. Нагасова, Г. Романової, Г. Tkachuk та ін.

Технології змішаного та дистанційного навчання стали предметом наукових розвідок О. Базелюка, Д. Гуменого, Р. Гуревича, М. Кадемії, М. Пригодії, Л. Романова та ін.

Однак, незважаючи на вагомість проведених досліджень щодо професійного вдосконалення педагогів закладів П(ПТ)О, потребує вивчення та обґрунтування науково-методичний супровід застосування технології змішаного навчання у розвитку технологічної культури майстрів виробничого навчання аграрного
foundations of the application of mixed learning technology in the development of the technological culture of the Master of Industrial Training of the agrarian profile on the basis of educational and methodical centers of VET (hereinafter – NMC of VET).

Research methods. The article analyzes psychological-pedagogical and methodical literature, scientific sources, educational and methodological materials, experience of upgrading the qualifications of Master of Industrial Training of an agrarian profile to justify the features of the implementation of blended learning technology in the development of technological culture of Master of Industrial Training of an agrarian profile based on educational and methodological centers of VET (hereinafter – EMC VET).

Results and discussion. An objective necessity today is the application of the technological culture of the Master of Industrial Training of an agrarian profile in the process of development and upgrading the skills of training technologies, built on innovative principles of adult education, and aimed at the further personal self-determination and self-realization of the teacher of the VET institution. It should be noted that one of the key educational trends in the world, according to The NMC Horizon Report: 2017: Higher Education Edition, has been blended learning over the past five years [8]. The concept of Blended Learning was first introduced in the 20s of the XX century, but the terminology was first used in a press release of the American Interactive Learning Center (1999).

Researchers M. Horn, H. Staker understand the concept of "blended learning" as a balance of traditional classroom classes and learning with the help of electronic technologies [9]. According to K. Buhaichuk, blended learning in a broad sense should be considered as different options for combining forms and methods of organization of formal, informal, informal learning, as well as self-study, which are carried out to achieve the person's predetermined educational goals while preserving the mechanism of control over time, place, routes and learning pace [1].
Based on the analysis of scientific developments, we can state that in modern foreign studies, the term "blended learning technology" has acquired a general meaning and includes various forms of combining traditional learning with the possibilities of modern information technologies.

When introducing blended learning, the tutor becomes the key figure in the educational process, who is responsible for conducting classes with students and promotes and helps in creating an appropriate learning environment. Therefore, the methodologists of the EMC VET should possess the competences of a tutor, who should perform the functions of a supporter of the process and content, a consultant, a researcher, a project manager, a technologist, an expert and a manager.

With the application of blended learning technologies, the role of ICT, modern pedagogical technologies for the implementation of educational and methodological support for the development of the technological culture of Master of Production Training of an agrarian profile is increasing.

Thanks to the introduction of blended learning technologies, the masters of industrial training are able to realize their own trajectories of the development of technological culture in accordance with individual requests and needs, the existing level of defined personal formation.

Resolute activity on the development of the technological culture of the Master of Production Training of the agrarian profile is realized through the active use of project, problem, game, interactive learning, case technology and other technologies by the methodologists of the EMC VET; reliance on life and personal experience of teachers, development of their professional competences. The individual work of teachers is aimed at creating their own information resources (blogs, websites), educational and methodological support in the context of the application of modern pedagogical and production technologies in the educational process (manuals, educational and methodological complexes, methodological developments, workbooks, vизначених навчальних цілей зі збереженням механізму контролю за часом, місцем, маршрутами та темпом навчання [1].

На основі аналізу наукових напрацювань можемо констатувати, що в сучасних зарубіжних дослідженнях термін "технологія змішаного навчання" набува узагальнюючого змісту та включає в себе різні форми поєднання традиційного навчання з можливостями сучасних інформаційних технологій.

При запровадженні змішаного навчання ключовою фігурою освітнього процесу стає тьютор, який відповідає за проведення занять із здобувачами та сприяє й допомагає створенню відповідного навчального середовища. Тому методисти НМЦ ПТО мають володіти компетентностями тьютора, який має виконувати функції підтримувача процесу і змісту, консультанта, дослідника, проектувальника, технолога, експерта і менеджера.

При застосуванні технологій змішаного навчання зростає роль ІКТ, сучасних педагогічних технологій для здійснення навчально-методичної підтримки розвитку технологічної культури майстрів виробничого навчання аграрного профілю.

Завдяки запровадженню технологій змішаного навчання майстри виробничого навчання мають змогу реалізувати власні траєкторії розвитку технологічної культури відповідно до індивідуальних запитів і потреб, наявного рівня означеного особистісного утворення.

Цілеспрямована діяльність щодо розвитку технологічної культури майстрів виробничого навчання аграрного профілю реалізується через активне використання методистами НМЦ ПТО технологій проектного, проблемного, ігрового, інтерактивного навчання, кейс-технології та інших; опору на життєвий та особистий досвід педагогів, розвиток у них професійних компетентностей. Індивідуальна робота педагогів спрямовується на створення власних інформаційних ресурсів (блогоі, сайтів), навчально-методичного забезпечення в контексті застосування сучасних
instructional and technological documentation, etc.), study and dissemination of positive pedagogical experience.

At the same time, the use of blended learning technologies enables each teacher to work at an individual pace, to choose ways of obtaining and spreading knowledge, improving professional and pedagogical competence, and constructing their own educational trajectories. In particular, during face-to-face training, teachers acquire primary skills and abilities, which they consolidate and apply in their professional and pedagogical activities during the distance stage, with appropriate support from the methodologist of the EMC VET.

To ensure openness and multi-channel communication, the EMC for the development of the technological culture of masters of industrial training of an agrarian profile, the web environment of distance learning, the information portal "Vocational Education of Khmelnychchyna", the blogosphere of teachers of VET institutions, etc. are constantly used.

The results of the study of scientific and pedagogical sources and the work practices of educational institutions indicate that there are different models of blended learning, in particular: rotational, virtual-enriched, flex and self-blend models [5: 123]. We describe the application of the rotation model and the flex model in the construction of the educational process regarding the development of the technological culture of the masters of industrial training of the agrarian profile in the VET vocational training center.

At the practical stage, the organization of upgrading the qualifications of masters of industrial training of an agrarian profile in the EMC VET for the development of their technological culture is implemented in a differentiated manner according to the rotational model (for teachers who have a low and medium level of technological culture) and the flex model (for teachers who have sufficient and high levels of technological culture) of blended learning.

In the rotational model, full-time and remote learning cycles are successively
combined. The intramural cycle provides for the participation of masters of production training of an agrarian profile in collective forms of regional methodical work, the content of which is aimed at working out the regulatory and legal framework of the VET system; peculiarities of SVET implementation, developed on a modular-competency basis; designing the content of the professional and practical training of future qualified workers in the agricultural industry; developing and maintaining educational planning and accounting documentation for the teacher of the VET institution; organization of the educational process with elements of a dual form of education; studying the experience of introducing modern pedagogical, production and information technologies into the educational process, creating a system of modern means of industrial training; development of criteria for evaluating the educational achievements of students in industrial training and industrial practice; carrying out quality analysis of increasing the efficiency of the educational process. The active participation of the masters of industrial training is manifested through speeches, reports, presentation of experience, conducting open lessons of industrial training and their analysis.

At the same time, the integrating link is the special course "Basics of technological culture of Masters of Production Training of an agrarian profile" [7: 148-153]. The program is designed for 30 hours (1 ECTS credit) and is structurally built from five modules ("Technological culture of the master of industrial training as an indicator of the development of society", "Professional training methodology", "Modern technologies of training", "New technologies of soil cultivation and cultivation of agricultural crops", "Research activity of the master of industrial training"), each of which is allocated 6 hours. Three topics are covered within each module. The logic of mastering the special course involves classroom training and independent work within each module.
expediently to ensure productive training of masters of production training of an agrarian profile at the face-to-face stage. Special attention is focused on the use of active methods (discussion, brainstorming, case method, moderation method, and others), which initiate the creative activity of the masters of industrial training, give a high effect of identifying creative abilities, and develop the communication skills of all participants in the educational process.

In order to maximize the involvement of industrial training masters in active educational and cognitive activities in class and the development of an action plan for the discussed problem, it is effective to use the moderation method, which focuses on the content, on solving a specific problematic issue, is aimed at achieving the planned result, promotes the independent work of each participant and creates a free partnership atmosphere. A moderator is a coordinator, an organizer of a lesson, who does not interfere in the content of the work, but knows how to build it. Key characteristics of the moderation method are as follows: emphasis on work in small groups; algorithmic activity; written recording of all steps of task performance; non-interference of the moderator during the lesson in the content of the work in small groups.

Effective techniques and techniques of the moderation method are brainstorming, field of coordinates, POPS formula, mental maps, multi-position survey, Bloom’s cube, basket of ideas, six thinking hats and others. The main processes of moderation are visualization (visual representation of thoughts, ideas, decisions together, in the form of diagrams, pictorial drawings), verbalization (group discussion according to accepted rules), presentation (presentation of the results of the work of small groups), feedback (exchange of meaningful and emotional information between participants).

The expediency of using the moderation method is determined by the fact that it is aimed at activating the analytical and reflective activities of teachers, developing research and project skills, communication skills and teamwork skills. The process of joint work, organized using the methods of module.

Для забезпечення продуктивного навчання майстрів виробничого навчання аграрного профілю на очному етапі доцільно застосовуватися кейс-технологія, тренінгова технологія, технології інтерактивного, проблемного, ігрового навчання. Особлива увага при цьому зосереджується на використанні активних методів (дискусія, мозковий штурм, кейс-метод, метод модерації та інші), які ініціюють творчу активність майстрів виробничого навчання, дають високий ефект виявлення творчих здібностей, розвивають комунікативні навички усіх учасників освітнього процесу.

Для максимального залучення майстрів виробничого навчання до активної навчально-пізнавальної діяльності на занятті і розроблення плану дій з обговорюваної проблеми ефективним є застосування методу модерації, який концентрується на змісті, на вирішенні конкретного проблемного питання, спрямований на досягнення запланованого результату, сприяє самостійній роботі кожного учасника та створює вільну партнерську атмосферу. Модератор – це координатор, організатор заняття, який не втручається в зміст роботи, але знає як її будувати. Ключовими характеристиками методу модерації є такі: акцент на роботі в малих групах; алгоритмічність діяльності; письмове фіксовання усіх кроків виконання завдань; невтручання модератора під час заняття в зміст роботи малих груп.

Ефективними техніками і прийомами методу модерації є мозковий штурм, поле координат, ПОПС-формула, ментальні карти, багатопозиційне опитування, кубик Блума, кошик ідей, шість капелюхів мислення та інші. Основними процесами модерації є візуалізація (наочне уявлення думок, ідей, рішення спільно, у вигляді схем, образних малюнків), вербалізація (групове обговорення за прийнятими правилами), презентація (представлення результатів роботи малих груп), зворотний зв’язок (обмін змістовою та емоційною інформацією між учасниками).
implementing this method, contributes to the removal of communication barriers, creates conditions for the development of creative thinking and making non-standard decisions, joint activity skills, readiness to bear responsibility for one's actions, develops self-confidence, purposefulness and other important personality qualities.

At the same time, a specific arsenal of these technologies is a group of organizational and operational methods. In this aspect, when studying theoretical issues, we use modeling of pedagogical situations, and for the acquisition of practical skills – a game (specially organized activity) and projecting and reflection (an activity carried out naturally). The indicated methods allow one to understand the specifics of the values that underlie the professional and pedagogical activity of the master of production training of an agrarian profile, to accept them on a personal level and to emotionally "experience" them in the process of understanding and perception. The didactic field of their application is expanded and strengthened thanks to the use of ICT (online whiteboards, services for saving documents, creating presentations, quizzes, didactic games, interactive educational and methodological support (exercises, posters, schemes, mental maps) [6].

We also draw attention to the use of the training form of education, which makes it possible to organize the educational activities of industrial training masters based on their own experience in accordance with the needs of the audience, taking into account the individual and psychological characteristics of teachers and the social and psychological properties of training groups. According to G. Romanova, "it is the training preparation that best contributes to the self-realization of teachers. The intended results of the trainings are usually presented in the form of specific skills, while the actual results may be slightly different. In positive cases, it can be a reassessment of values, the perception of new ideas, overcoming one's own stereotypes in professional activity, the birth of one's own concepts, the experience..."
of creative interaction with others, that is, everything that we associate with self-development and that pushes us to self-realization" [4: 316].

Successful assimilation of the special course program is facilitated by the electronic educational and methodological complex (hereinafter – EEMC) "Basics of technological culture" (https://cutt.ly/fktRDz4), with which teachers work during face-to-face and distance learning cycles. It should be noted that for each module of the special course at EEMC, individual tasks are offered for independent work of masters of industrial training of the agrarian profile. Types of tasks and their brief characteristics are presented in Table 1.

During the distance cycle, masters of industrial training of the agrarian profile deepen their theoretical knowledge, improve the skills and abilities acquired during the full-time cycle from each module of the special course, and must test them in the educational process, as well as complete an individual task - to prepare a methodical development of an industrial training lesson using of a certain pedagogical and production technology, educational project, case exercises for class, article from own work experience, summarize the pedagogical experience of a colleague, develop instructional and technological documentation, conduct an analysis of a production training lesson, create a professional blog, professional portfolio, etc.

Заплановані результати тренінгів, як правило, подають у вигляді конкретних вмінь, тоді як реальні результати можуть бути децю іншими. У позитивних випадках це може бути переоцінювання цінностей, сприйняття нових ідей, подолання власних стереотипів у професійній діяльності, народження своїх концепцій, досвід творчої взаємодії з іншими, тобто все те, що ми пов’язуємо із саморозвитком і що підштовхує нас до самореалізації" [4: 316].


У ході дистанційного циклу майстри виробничого навчання аграрного профілю поглиблюють теоретичні знання, удосконалюють уміння і навички, отримані під час очного циклу з кожного модуля спецкурсу, та повинні їх апробувати в освітньому процесі, а також виконати індивідуальне завдання – підготувати методичну розробку уроку виробничого навчання з використанням певної педагогічної та виробничої технології, навчальний проєкт, кейс-вправи до заняття, статтю з власного досвіду роботи, узагальнити педагогічний досвід колеги, розробити інструкційно-технологічну документацію, провести аналіз уроку виробничого навчання, створити професійний блог, професійне портфоліо тощо.

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<tr>
<th>Type of the task</th>
<th>Characteristic</th>
<th>Example</th>
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<tbody>
<tr>
<td>Tasks for self-analysis, self-reflection and self-assessment</td>
<td>They require an analysis of their own professional and personal experience, individual goals, values, ideas.</td>
<td>Formulate the goals and objectives of your activity (mission, pedagogical credo). Return to the task at the end of the special course program, describe the changes.</td>
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<tr>
<td>Training tasks</td>
<td>They require independent practical work on training this or that pedagogical skill.</td>
<td>Prepare a technological map of an industrial training lesson in production conditions for mastering the latest agricultural machinery (optional) and conduct the class.</td>
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<tr>
<td>Problematic questions</td>
<td>They allow for the construction of new connections between previously studied and new concepts, facts and regularities, causes and consequences, studied material and personal experience, etc.</td>
<td>Formulate problematic tasks for a separate lesson with justification of their application.</td>
</tr>
<tr>
<td>Search tasks</td>
<td>They demand activities related to the search for certain information and a way to solve the task. Such tasks may require the involvement of external sources.</td>
<td>Prepare a list of documents necessary for planning and organizing professional and practical training.</td>
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During the distance cycle, the methodologists of the EMC VET provide tutoring support for the independent work of the masters of industrial training. At this stage, one of the main means of training for masters of production training in the agrarian profile is the EEMC "Fundamentals of technological culture", as well as the textbook "Agrotechnology" [2], which is used when they design training sessions, develop the author's educational and methodological support for the profession (method development, instructional and technological maps, tasks for updating knowledge, self-monitoring and control, etc.) and is a means of managing the process of students' acquisition of basic and professional competencies in the profession "Tractor-machinist of agricultural production".

To increase the activity of the independent work of the masters of industrial training, it is effective to use "immersion" situations, when the teacher, using a benchmarking study, studies the work experience of colleagues both in his teaching staff and in other VET institutions of an agrarian profile.

Mastering each module of the special course ends with a knowledge test. As part of the remote cycle, masters of production training of the agrarian profile also participate in regional webinars and receive...
online consultations. At the same time, face-to-face communication with the tutor is not excluded if necessary.

Web resources are used for high-quality organization of distance learning:
- with limited access: distance learning web environment of the Scientific-methodical centre of vocational education and training and further training for engineering-pedagogical workers in Khmelnytskyi region based on the Moodle platform http://hmnmc.rit.org.ua/ (materials for lectures and practical classes, diagnostic tools for professional development);
- with open access: the information portal "Proftehosvita Хмельниччина" (profosvitakm.at.ua), websites of the Scientific-methodical centre of vocational education and training and further training for engineering-pedagogical workers in Khmelnytskyi region, the blogosphere of teachers of vocational training institutions of the region, where the materials of meetings of the scientific and methodical council, regional specialist sections, seminars, webinars are accumulated, conferences, better pedagogical experience, as well as regulatory and legal framework, scientific and methodological, educational, analytical, statistical, instructional materials, etc.

The defined web resources ensure constant communication, cooperation and activity of all subjects of professional development, monitoring of the educational process.

Unlike the rotational model, the organization of the educational process according to the flex model involves more online training, which is supplemented by face-to-face consultations, group projects, and the work of creative groups. At the same time, an important aspect of this model of education is the active popularization by teachers of their own work experience by conducting open lessons of industrial training, master classes, presentations within the framework of regional and all-Ukrainian methodical events (regional professional section, seminars, conferences, round tables, exhibitions, etc.).

Mastering the special course "Basics of"
technological culture of masters of industrial training of an agrarian profile" is carried out by masters of industrial training independently with the support of a methodologist of the EMC VET. The use of EEMC “Basics of technological culture" allows for constant self-monitoring of knowledge. At the same time, each master of industrial training of an agrarian profile performs individual tasks similarly to the distance cycle of the rotational training model. After completing the training under the special course program, masters of production training of the agrarian profile pass the final examination.

Educational and methodical support for the development of technological culture among the masters of industrial training is provided by the same means of training as in the case of the rotational model. Methodists of the EMC VET (tutors) are entrusted with the function of pedagogical support for distance learning of masters of industrial training of an agrarian profile. The effectiveness of tutoring support is increased by observing the following principles [3: 23]: a differentiated and individual approach (taking into account the level of technological culture of the master of industrial training of an agrarian profile, his aspirations and expectations, learning style); systematics and systematicity (periodic consultations in accordance with the content of the training program, and not only when the teacher asks for help); complex approach (different directions, methods and forms of work); combination of individual, group, frontal work with teachers (individual conversations and consultations, creative groups, frontal classes).

One of the advantages of training without separation from professional and pedagogical activity is that the masters of industrial training have the opportunity not only to observe the work of colleagues in solving pedagogical tasks, but also to directly borrow the best experience, master innovations and, on this basis, independently design the educational process. At the same time, the implementation of practically oriented tasks within the scope of studying a special course ensures the creation by teachers of 

Використання ЕНМК "Основи технологічної культури" дозволяє проводити постійний самоконтроль знань. При цьому, кожен майстер виробничого навчання аграрного профілю виконує індивідуальні завдання аналогічно як при дистанційному циклі ротаційної моделі навчання. Після завершення навчання за програмою спецкурсу майстри виробничого навчання аграрного профілю проходять підсумковий контроль.

Навчально-методична підтримка розвитку технологічної культури у майстрів виробничого навчання забезпечується тими ж самими засобами навчання, що й при ротаційній моделі. На методистів НМЦ ПТО (тьюторів) покладається функція педагогічного супроводу дистанційного навчання майстрів виробничого навчання аграрного профілю. Ефективність тьюторської підтримки підвищується при дотриманні таких принципів [3: 23]: диференційований та індивідуальний підхід (врахування рівня технологічної культури майстра виробничого навчання аграрного профілю, його прагнень і очікувань, стилю навчання); систематичність і системність (періодичне проведення консультацій відповідно до змісту програми навчання, а не тільки при зверненні педагога за допомогою); комплексний підхід (різні напрями, методи і форми роботи); поєднання індивідуальної, групової, фронтальної роботи з педагогами (індивідуальні бесіди і консультації, творчі групи, фронтальні заняття).

Однією із переваг навчання без відриву від професійно-педагогічної діяльності є те, що майстри виробничого навчання мають можливість не тільки спостерігати за роботою колег щодо вирішення педагогічних завдань, але й безпосередньо запозичувати кращий досвід, опановувати інновації і на цій основі самостійно проєктувати освітній процес. Водночас, виконання практично орієнтованих завдань в межах вивчення спецкурсу забезпечує створення педагогами освітніх продуктів, готових до впровадження у процес підготовки кваліфікованих робітників для сільського
educational products ready for implementation in the process of training qualified workers for agriculture.

The implementation of methodological support on the basis of ICT provides proper support of masters of industrial training in the workplace, promotes the formation of network professional pedagogical communities of teachers, allows to create the opportunity to acquire additional relationships and interpersonal contacts, as well as to increase the level of information competence of masters of industrial training. It is updated in the conditions of digitalization of the agricultural sector.

The effectiveness of the organization of the educational process regarding the development of the technological culture of the masters of industrial training of the agrarian profile largely depends on the set of applied andragogic and acmeological technologies, namely: project technology, pedagogical coaching, technology of scientific and methodological support. In this sense, it is appropriate to choose such methods, the classification feature of which is the method of communication between the tutor and the master of industrial training. They include:

- the method of training through the interaction of the Master of Industrial Training with educational resources with minimal participation of the methodologist of the EMC VET (self-study). It involves preliminary preparation and selection by the methodologist of various educational resources (printed, electronic, audio and video materials, educational, methodical manuals, etc.), which are placed on the distance learning platform;

- the method of individualized training, which is characterized by the interaction of one master of industrial training of an agrarian profile with a methodologist of the EMC VET. This method is mainly implemented using such technologies as chat, e-mail, Skype systems, Zoom, etc.;

- a method based on the presentation of educational material by the methodologist of the EMC VET for the entire group (“one to many” training). This method is used in thematic counseling, conducting video
lectures based on a remote platform, a platform for organizing webinars (for example, the Prufme platform, Zoom, etc.), which are supplemented with appropriate electronic educational and methodological materials (electronic lecture, presentation, etc.).

- a method of learning in cooperation, which is characterized by active interaction between all participants of the educational process ("many-to-many" learning). It is this method as an alternative to the traditional classroom-lecture system, which is focused on the group work of students, that is of the greatest interest for distance learning. Conceptually, this method combines three ideas: learning in a team, mutual assessment, learning in small groups. The role of the EMC VET methodologist (tutor) in such training is reduced to the fact that he sets the topic (sets the educational task), and then must create and maintain such a favorable environment in which the masters of industrial training could work in cooperation. It is this method that involves the wide use of project activities, problem-based learning and learning through research.

At the same time, we note that the general content of the educational process regarding the development of the technological culture of the masters of industrial training of the agrarian profile in the conditions of the EMC VET for the rotational and flex models is common.

Conclusions and research perspectives. Therefore, the application of mixed learning technology enables the development of the technological culture of masters of industrial training of an agrarian profile in the EMC VET through various types of activities (mastery of the special course "Basics of technological culture of masters of industrial training of an agrarian profile", participation in competitions, professional communities, pedagogical consulting, online training, internships, etc.), ensures their creation of cultural samples of their own professional experience, formation of skills for working in a team, solving professional and pedagogical problems, critical analysis of the obtained results, evaluation of their
self-development in the context of the introduction of pedagogical, production and information and communication technologies into the educational process of institutions of VET.

The possibility of choosing training parameters, development and implementation of an individual educational trajectory, responsibility for the results of their training allow teachers to fully express themselves as a subject of educational activity. At the same time, the forms of interaction and educational and methodological support for the development of the technological culture of the masters of production training of the agrarian profile must be constantly modernized taking into account educational innovations, technological changes in the agrarian sphere and the social order of society.

In further discoveries, it is planned to study the technologies of professional development of masters of industrial training in the conditions of open education.

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