INTRODUCTION

Methods of scientific organisation of labour in the system of work of Design and Technology teachers determine the conduct of research and diagnostic activities of students, including diagnostics of individual development and learning needs, and psychophysical abilities of students to identify the causes of possible failure and support the strengths of students. After all, the most important task of a modern school is to prepare students to take responsibility for their own learning, developing their independence, creative education, thinking and actions, self-education, and improving skills. Therefore, the role of the teacher changes, and they become an adviser, observer, mentor who organises the educational process [1]. This situation necessitates changes in education, including turning to new, more effective methods of scientific organisation of work. In this regard, methods of activating the educational process are of particular importance, including: didactic discussions, brainstorming, meta-plan, portfolio, decision trees, and a conceptual map. It is important to pay special attention to methods related to research, experiments, and observations. Regardless of the
methodological information, every Design and Technology teacher should implement their idea to reproduce a productive curriculum. The effect of the teacher’s educational process, including the optimal selection of teaching methods, largely depends on the correct scientific organisation of work [2].

Features of labour activity require careful planning of the didactic process, especially when it is implemented by the method of educational programmes. Effective methods should prevail, as they stimulate activity, allow the students to develop creative thinking and the ability to work in a group. The teacher is required to achieve the goals planned in the education strategy, select and apply appropriate teaching methods and techniques. Consciously and systematically used method of work allows mastering knowledge together with the ability to use it in practice, developing the abilities and interests of students. In education, the idea of unity in differentiation should be implemented [3]. This means creating an environment in which, being aware of the individual needs and capabilities of children and young people, joint education of all schoolchildren is ensured, with an emphasis on students with special educational needs. The understanding educational needs strives to implement the idea of equal educational opportunities for all applicants for education. The scientific organisation of work should be profound and flexible. This is self-management in educational life, which is influenced by the obligations imposed by the environment. This is a multi-stage process that needs to be repeated and adapted to each new situation, which requires constant system work [4].

In the professional life of a Design and Technology teacher, it is very important to feel everything that they do and what brings them closer to career goals. The definition of individual career success can evolve at different stages of a professional career, so the challenge is to constantly understand which activities are important and produce the best results. A diverse set of concepts of personal achievement, working with a good team in a friendly environment, respect for others, thirst for work, continuous development, challenges, daily job satisfaction, and financial success effectively affect the use of methods of scientific organisation of labour in the system of work of Design and Technology teachers. Individual expectations determine how feelings associated with the implementation of personal professional intentions are formed. However, the two-way transfer of expectations plays a very important role of employers in relation to subordinates and employees, which justifies the implementation of methods of the scientific organisation of labour in the system of working hours. In addition to working and trying to make better use of time, it is crucial to analyse the current state of tools that can improve time management. This refers not only to the proportions of time allocated into assigned professional activities, but also a combination of scientific, educational, and organisational responsibilities [5; 6].

The purpose of the study – to consider effective methods of scientific organisation of labour in the system of work of Design and Technology teachers.

MATERIALS AND METHODS
The theoretical and methodological basis of the study consists of the following methods: correlation, empirical, and component analysis. The correlation approach focuses on the interdependencies between educational phenomena, which is the most important goal and the main task of pedagogy. It is impossible to ignore the existence of relations of scientific organisation of labour in the system of work of Design and Technology teachers, but at the same time, there is a feeling that these relations are not clear. To better explain these processes, it is important to use functional interdependence. A functional relationship is a relationship between two variables. Each value of an independent variable corresponds to a strictly defined value. For a better understanding of correlation dependence, its relationship to causality should be included. The influence of an independent variable is the keystone of the scientific organisation of labour in the system of work of teachers. The correlation index serves only as a basis for understanding the measurement of correlation strength. Therefore, it should be used where conditions allow. Interpretation of the remaining correlation coefficients should always be based on comparisons of the relevant concepts and methods of scientific organisation of work.

The empirical method is defined as a set of formally deliberate mental and pre-considered actions involving the behaviour of a Design and Technology teacher, aimed at considering the scientific problem of labour organisation and a specific repetitive way to solve it. These are typical and repetitive methods of collecting, processing, analysing, and interpreting empirical data that are used to obtain the most or optimally substantiated answers to questions posed. This method is the broadest and most preferable concept in relation to the research technique. Technique, in turn, is a subordinate element in relation to concepts, and above the tool of consideration. The latter, in turn, has the narrowest scope and is a concept subordinate to both the essence of the method and the essence of the research technique. The question of a particular definition of concepts is not only a question of arbitrary designations, but also the result of two types of reasons. The first type of reason is a condition that attributes to this concept a set of features that can be used to predict the performance of actions. The second type of reason determines the principles of terminological typology that follow from the logical function of labour organisation. This means that the basis for the definition will be the meaning or content given to this concept by logic.

The component analysis consists in studying the principles and methods of research recommended and applied in the scientific organisation of labour of the system of work of Design and Technology teachers. The methodology is cultivated in a descriptive form, as a rule, on the example of research conducted so far in the field of pedagogical science, which is cultivated normatively, and attempts are made to establish the principles and methods of the research procedure mainly in the postulatory sense. This analysis requires special care about the growing methodological correctness.
Pedagogical reality, as a rule, is more complex than expected in the preparation of specific components of its implementation, so there is a need for deep knowledge of the organisation of the pedagogical labour system. Using this approach, it is always necessary to be aware of the tendency for representatives of empirical and praxeological pedagogy to clearly subordinate quantitative and qualitative indicators. This means that the Design and Technology teacher is not limited only to a quantitative or qualitative description or analysis of the studied facts, phenomena, processes, and events. The teacher tries to supplement and enrich the conducted quantitative research with qualitative ones.

RESULTS AND DISCUSSION

Modernisation and improvement of the quality of education are being carried out all over the world. Teachers on whom the success of schools, students, and citizens depends are the recipients of expectations, demands, and orders that often exceed their capabilities. One of the most important tasks of any Design and Technology teacher is to create and then improve the workshop and working methods, expand knowledge and skills, and improve the level of the school in which they work. Educating children and young people is the most important task of everyone who matters in the system of the future nation. A school that participates in student training should be open to its needs and expectations, especially those related to technological progress, information technology development, changes in the economy and family culture. In addition, it should constantly improve in the field of quality and the use of modern teaching methods. After all, every teacher would like to teach in a school that provides them with a satisfactory number and quality of teaching tools, appropriate equipment in classrooms with audiovisual tools and access to e-learning resources. Due to the introduction of necessary changes in the education system and the focus on its implementation in accordance with the abilities, needs, and capabilities, teachers should constantly change the methods of scientific organisation of work to those that are more related to the creative use of modern technology and means of communication, computers, and multimedia devices.

An important method of scientific organisation of work of Design and Technology teachers is the field of strengths and obstacles. Depending on what prevails, a strategy is chosen based on the elimination or strengthening of weaknesses. This technique is also useful when planning work. For each of the implementation measures, strengths and barriers are listed, which determine what actions to start with [7]. Next, it is important to consider the technique of completing the task. The conditional name of this technique follows from the designation of specific executive tasks. The starting point is to identify developmental weaknesses in planned activities. The main goal is planned for partial or intermediate goals and means of implementation. The structural method is divided into monthly goals, and these, in turn, into specific tasks that need to be completed during the month. Tasks are assigned to individual organisational units of the school. In practical application, this method is ideal for a holistic understanding of activities, which allows controlling the harmonious implementation of the main goals. To analyse labour as the most important value of human activity, which consists in determining its main functions, it is worth considering the division of functions depending on their connection with pedagogical work into practical, diagnostic, reflexive, and critical. Most often, in school practice, a Design and Technology teacher is perceived as a performer of didactic and educational functions.

The transfer of knowledge and skills is based on the organisation of the unit associated with this function, which may differ in the application of various methods, forms, and methods. The teacher should treat their work as a value, therefore, it is necessary to constantly maintain or even improve their subject level. The scientific organisation of work can also be considered from the standpoint of the correct performance of related activities. If this is manual labour, then the activity is standardised by profession, with a certain use of machines, tools, and auxiliary tools. In the case of intellectual work, it cannot be limited to it [8]. The teacher performs their pedagogical work not only at school. The work of a teacher goes beyond pure didactics when there is involvement on their part in their own activities on the territory of the institution. This expansion refers to a broader interest in the entire spectrum of school life, all elements related to students through knowledge of their real abilities, expected work results, needs, opportunities, difficulties. This knowledge is necessary in order to choose such methods and tools that would help to understand and reach the applicant for education. The search for an effective form of educational planning, in accordance with the requirements of the definition of education, should be guided by the concept of strategic work. Assuming that learning is understood as an appropriate activity aimed at qualitative changes in students who are balanced in emotional and cognitive aspects, it is possible to combine the harmony of interactions in both these areas, which encourage them to look for a form of activity design that would provide optimisation of planning in both areas.

The teacher’s work, which is the main dimension of professional activity, can be considered as a motive for students’ behaviour. A teacher’s work can take on meaning where it is understood as an object, dimension of activity, and scope of the contractor’s procedure. In the work of a teacher, this is their area of training, the necessary amount of knowledge, knowledge of the legal foundations of the profession, current official regulations, and basic activities. The functional method deals with defining a set of identical activities with teaching functions, practical and related skills, and readiness to complete tasks. This is a kind of content of preparation for its implementation, a set of qualifications and skills that help in its implementation, measurable and visible consequences of its occurrence. The work of a teacher becomes a value when its implementation follows from the employee’s attitude to the profession and highlights them as a responsible person, prepared for actions and interested in
the result. The proposed approach requires a reassessment of the conventional teacher’s workshop, which is still focused on the implementation of the material, which at the same time allows effectively using the requirements for improving the effectiveness of education. Various factors and conditions determine that the scientific organisation of labour in the system of work of Design and Technology teachers is very diverse, its role and social scale are constantly growing [9; 10].

The concept of new solutions is derived from the theory of organisation and management, which denotes the process of adaptation to changing working conditions. It achieves an effective state through the openness of employees to new ideas and trends, continuous improvement of employees. The organisation initiates and supports these activities, which are constantly transformed taking into account individual components and interactions between these elements. Educational activities cover a very wide range and relate not only to education and preparation for the profession but also to the development of the worldview of teachers and students. Teachers should expand their knowledge and develop their skills. It is known that this has a positive effect on the results of improving the professional level of teachers related to school practice. It is important to develop them in a time adapted to the needs of students. But the forms and content offered as part of improving the organisation of work do not always meet the expectations of principals and teachers in general. According to new approaches to educational work, the task of teachers today is not only to transfer knowledge but also various types of skills related, in particular, to teaching methods. In order to change the working conditions, the school needs, on the one hand, autonomy, which will force changes to adapt to the individual situation, and on the other – the support of teachers, which will strengthen these processes and help prepare for meeting the established requirements.

The essence of the school is not so much to equip the student with knowledge thanks to modern technologies available at every step but to develop the ability to make the right choice, forming an optimal attitude to scientific work [11]. The course of the educational institution and its internal environment create requirements and challenges, the implementation of which contributes to the development of the internal climate of employees, knowledge, popularisation of learning ideas that encourage cooperation and a scientific approach to solving problems. The school community, as confirmed by pedagogical practice, is an impetus for making changes and is used to plan activities with the participation of external support. In order for organisational models of teachers’ work to bring tangible results to the school, it is necessary to cooperate with management, teachers and auxiliary institutions – pedagogical institutions, psychological consultations. Success lies not so much in the proper execution of tasks on the part of the organisation that implements them, but in the ability to join forces and work together as a team. Design and Technology teachers, in the process of supporting the scientific organisation of work, should participate in the diagnosis of school development needs; plan activities that allow making changes in the work process; introduce solutions and practices – new methods of work, solutions or recommendations for the future. Methods of scientific organisation of labour in the system of work of Design and Technology teachers show different types of the work process, help to recognise models of actions and initiate changes in the work of the school, which should be adapted to the school calendar and working hours of teachers, their number and resources of the educational institution.

The Design and Technology teacher should be able to create and improve the technique of their work, which includes: regulatory and legal documentation regulating their activities in the field of education; planning of premises with appropriate equipment and teaching tools; dynamic workplaces for organising various forms of student activity; properly designed documentation for organising the didactic and educational process; their own professional development [12]. The basis for creating a skill is a good preparation of the teacher for conducting classes and their purposefulness and teaching skills. The school should have a teacher who is dedicated to their work, can find innovative and optimal solutions, check their own results achieved and form, if necessary, adjustments to the current educational process through didactic measurements, research, and assessment. The method of organising education determines its effectiveness, that is, its forms of implementation, which in turn are determined by the goals of education, the number of students, the place and time of work, and the equipment of the school workshop that organises training. It is necessary to consider several factors that affect its implementation, which include: the level of knowledge of participants; the ability to combine the transmitted messages with their practical application, life experience, equipment of the institution; the organisation of training with didactic resources; the ability of participants to independently perform didactic tasks.

Methods of scientific organisation of work determine the organisational side of educational activities, which highlights the conditions, course of training, and types of activities of participants in the educational process. They are closely related to the educational goals and criteria set by the teacher. Effective learning is accompanied by systematic, effective, informed, and purposeful actions. It is based on a well-thought-out foresight of the activities that the teacher performs in the educational process based on the curriculum and is a prerequisite for effective teaching and learning [13]. A well-planned implementation of the subject by the Design and Technology teacher protects them from the randomness and chaos of activities and allows assessing how well they achieve their goals in the main curriculum. Preparing a clear plan requires a specific definition of goals, selection of educational material, methods of cooperation, verification and clarification of the principles of assessing the achievements of school students. This means that planning is preceded by an analysis of the content of training in three dimensions: goals, materials, and requirements. Methodological planning determines the course of individual educational activities. The document of methodological planning includes:
methodological plan, scenario, synopsis. The plan transforms the content of training into learning situations for the implementation of planned activities. Such situations are designed to achieve an appropriate cognitive experience.

Many researchers and specialists in this field have always dealt with planning issues. Its necessity and usefulness in everyday life, both private and professional, based on all kinds of experience, is currently non-negotiable. Many professions and occupations depend on actions that are thought out over time. The work of a Design and Technology teacher is particularly related to the planning process. This follows not only from the organisation of the school year and didactic classes, for which it is necessary to properly prepare. The teacher should outline activities in relation to their students, and often their parents. Every teacher who wants to achieve professional growth should plan it in advance, which is a legal requirement in this matter. Although school work is a life capital, socio-economic factors encourage individual development and entry into today’s labour market. Usually, to facilitate the achievement of their goals, teachers combine such activities with professional development or the development of an educational institution. Moreover, in each school, teachers perform several managerial functions. It is almost impossible to take on such a function and perform it without appropriate plans. This applies to both principals and their deputies, subject teachers and other teaching staff who carry out their professional activities in schools and other educational institutions [14; 15].

Due to this multifaceted nature of the work, a teacher, in addition to performing their main duty within the limits of their competencies, carries out organisational, pedagogical, and methodological activities. The teacher acts as a leader and development stimulator, intermediary and negotiator. Factors that directly or indirectly affect the work of the profession of a Design and Technology teacher clearly indicate its complex and specific nature. However, a large number of responsibilities should not hinder personal development, which, in turn, is the key to achieving professional success. This is a system of measures that consists in determining the ways of implementing the intended activity, adapted to the conditions and general and partial goals of the activity. Many positive aspects of planning exist and are created in the conditions and general and partial goals of the activity. At the organisational level, it is possible to notice the following features: the goals of the school are fundamental, diverse, and long-term; they are generated by many institutions on a regular basis, so sometimes it is difficult to describe them in words; the school is an institution with the advantage of the human factor over equipment and technology; the school must form and work on the originality and uniqueness of the material, which is the personality of a young person, who, in turn, has their own goals, motivations, and attitudes; it is impossible to accurately measure the impact of the school on the consequences of its functioning [16]. On the other hand, at the social level, the specifics of the school include: the desires and expectations of society, which are growing rapidly in the era of modern civilisation, political and economic transformations; social pressure on the school arises in connection with the student population, the content of education, in terms of alternative sources of education, and the opening of countries to wide contacts between people; the desires and expectations of local society, which require a democratic school climate, joint responsibility, cooperation, and individualisation in the process of training and upbringing. This process fosters a sense of ownership and freedom, which strengthens the autonomy of the school and the cohesion of the teaching team [17].

Regardless of the working environment of the Design and Technology teacher, the planning process is also influenced by their personality. Positive, active and creative thinking, functional and psychological properties, and a pragmatic approach to own effectiveness are an introduction to creating, transforming, and improving oneself and own workshop. When planning and managing one’s own work time and process, it is necessary to be aware of and make optimal use of all the strengths of personality and plan for their further development. In this case, the implementation of plans may be easier and bring tangible results, which, in turn, undoubtedly motivates further work. Among the many skills in the work of a teacher, the following can be particularly useful: interpersonal communication skills, organisational and managerial abilities, planning own work and career, effective use of opportunities inherent in employees, organizing group work, training creative thinking, creating the image of a public person [18]. The above factors related to the teacher’s working conditions and position, and factors related to their personality, obviously do not exhaust the opportunities and threats when planning their own work in school and extracurricular activities. However, they need to be carefully considered so as not to lead to an exceptionally large discrepancy between the size of the plans and their actual use in practice. It is also known from experience that planning is a dynamic process that is constantly changing.

Planning and management should not lead to rigidity and inflexibility in decision-making. They should be designed in such a way that alternatives can be identified that can be effectively applied in the event of a change in the system of goals, conditions, or means of implementation. In addition, many mental processes are involved in the planning
process. The one who plans, optimally imagines themself, thinks, justifies, evaluates, and finally chooses and decides [19]. Planning functions include: purposefulness – all planning activities are subordinated at a certain point to the hierarchy of goals, because this is the only way to actively form management; forming character – refers to a rational course of action, namely the material, logical, and temporary consequence of performing planned tasks; orientation to the future – this orientation means, first of all, recognising and taking actions necessary to use future opportunities or avoid potential dangers; orientation to the process – this feature refers to the variable interdependence of partial plans that impose the existence of constant feedback. An action is a consequence of the idea of how it should happen. When planning the scientific organisation of labour in the system of work of Design and Technology teachers, it is useful to apply methods that facilitate work. One of such methods is the network technology method. After establishing the main goal, the types of activities required to achieve it are compared. These are key and core activities. Then the main and auxiliary activities that support key labour processes are summarised separately. In the end, there is a critical path, linking together in chronological order all those activities that require special attention [20; 21].

CONCLUSIONS

Scientific organisation of work at the school level helps to diagnose problems, plan and implement appropriate support. Building trust between staff and the school, especially the principal, is key to success in this process. Only then can schools open up to cooperation and assistance. The participation of teachers in labour planning and management provides an opportunity for constant contact with people who struggle with similar problems. Sharing experiences and finding solutions to problems together allow teachers to look at specific difficulties from different perspectives. Interschool collaboration and planning networks are becoming an element of improvement. This is a form of work that facilitates self-study and collaboration, promoting the exchange of experience and acquaintance with the right practical solutions, creating innovative solutions and expanding professional competencies. The organisation of this type of work has proven to be one of the key and very well-appreciated elements of improving teachers and the overall curriculum. Special attention is paid to the development of key methods of labour organisation and the need to create didactic situations that contribute to this.

The relationship between the formulation of goals and the assessment of academic success is revealed. Its task at each stage of work is to prepare for the planning and implementation of the educational process, turning intentions into actions. Goal awareness seems crucial, as it motivates and gives a sense of meaningful time spent at school. The correct formulation of learning goals also helps the Design and Technology teacher prepare a coherent lesson and focus on specific activities. The effectiveness of methods of scientific organisation of work is possible if there are interdisciplinary aspects that allow creating appropriate conditions for cooperation and creative activity. System elements of methods of scientific organisation of labour require the definition of targeted measures to substantiate the specifics and essence of planning and managing the work of Design and Technology teachers.

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Використання методів наукової організації праці у системі роботи вчителів трудового навчання

Анотація. Актуальність дослідження полягає в тому, що виникає потреба впроваджувати рішення, що сприяють розвитку шкіл та установ, діючи в змінених організаційних умовах, працюючи з використанням методів і прийомів наукової організації праці у системі роботи вчителів трудового навчання. Рішення, що дозволяють організувати та реалізувати процес навчання з використанням таких способів, сприяють виконанню дидактичних і виховних завдань, визначених школярською та навчальними завданнями. Ціллю цих заходів є забезпечення реалізації основної навчальної програми з урахуванням обмежень, що випливають із специфіки діяльності, що здійснюється. За нинішніх обставин ключовим питанням є розуміння і врахування сучасного стану організації предметного навчання з урахуванням правильного підходу до матеріалу, наданого учням, а також інструкціям і завданням. Мета дослідження – розглянути ефективні методи наукової організації праці у системі роботи вчителів трудового навчання. Теоретичну і методичну основу дослідження складають такі методи: кореляційний, емпіричний, компонентного аналізу. Важливо постійно розвивати свої навички в цій області, використовувати багато пропозицій сучасних технологій, присвячені цій діяльності, подолавши технологічний бар’єр. Організація і планування є одними з головних умов ефективності будь-якої свідомої та цілеспрямованої діяльності вчителя, особливо довготривалої, протягом усього навчального року. У системі роботи вчителя трудового навчання виділяються завдання, що покладаються на нього у навчальному закладі у зв’язку з виконуваною ним функцією. Він має неодмінно враховувати завдання, які випливають із аналізу положення освітнього процесу, які регулюють сферу діяльності шкільного педагога. Практична значимість полягає у продуктивному використанні методів наукової організації праці у системі роботи вчителів трудового навчання

Ключові слова: наукова організація, навчальна програма, освіта, учень, навчальний заклад

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