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APPLYING THE FORMS AND METHODS OF ORGANIZING TECHNOLOGY LESSONS IN THE CONDUCT OF PRACTICAL TRAINING

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Abstract
This article investigates the application of the forms and methods of organizing technology lessons in the conduct of practical training from a research-based methodological perspective. The study argues that modern technology education should not be limited to the transmission of technical information or the reproduction of manual operations; it must function as a competence-oriented pedagogical system that develops technological thinking, design culture, problem-solving capacity, safety awareness, cooperative behavior, professional orientation and creative performance. The article analyzes the didactic potential of frontal, individual, pair, group, brigade, laboratory-practical, workshop-based, project-based and digitally supported forms of lessons. It also examines explanatory, demonstrative, problem-based, project-based, case-based, instruction-card, technological-map, collaborative, criterion-referenced and reflective methods as instruments for increasing the effectiveness of practical training. As a result, an integrated methodological model is proposed for organizing practical technology lessons through diagnostic-preparatory, motivational-problem, instructional-design, practical-executive, monitoring-corrective and presentation-reflective stages. The model emphasizes that practical training becomes educationally meaningful only when goal, content, form, method, tool, safety requirement, assessment criterion and reflection are connected into one coherent pedagogical process.

Keywords: Technology education, practical training, lesson forms, teaching methods, project-based learning, technological map, professional competence, reflection, criterion-referenced assessment.

Introduction

Annotatsiya:

Ushbu maqolada texnologiya darslarini tashkil etishning shakl va metodlarini amaliy mashg‘ulotlarni o‘tkazishda qo‘llash masalasi DSc darajasidagi ilmiy-metodik yondashuv asosida tahlil qilinadi. Tadqiqotda texnologik ta’limning zamonaviy vazifasi faqat o‘quvchiga mehnat operatsiyalarini o‘rgatish emas, balki texnik tafakkur, loyihaviy

fikrlash, muammoli vaziyatni yechish, xavfsizlik madaniyati, kasbiy yo'naltirilgan amaliy kompetensiya va ijodiy faoliyatni shakllantirishdan iborat ekani asoslanadi. Maqolada frontal, individual, juftlik, guruh, brigada, laboratoriya-amaliy, ustaxona, loyiha va raqamli qo'llab-quvvatlangan dars shakllarining didaktik imkoniyatlari ochib beriladi. Shuningdek, tushuntirish, namoyish, muammoli ta'lim, loyiha metodi, keys-stadi, instruktsion karta, texnologik xarita, hamkorlikda o'qitish, mezonli baholash va reflektiv tahlil metodlarining amaliy mashg'ulotlar samaradorligiga ta'siri ilmiy jihatdan yoritiladi. Tadqiqot natijasida texnologiya darslarida amaliy mashg'ulotlarni tashkil etishning diagnostik-tayyorgarlik, motivatsion-muammoli, instruktsion-loyihalash, amaliy-bajarish, monitoring-tuzatish hamda taqdimot-refleksiya bosqichlaridan iborat integrativ metodik modeli taklif etiladi.

Kalit so'zlar: texnologik ta'lim, amaliy mashg'ulot, dars shakllari, pedagogik metodlar, loyiha metodi, texnologik xarita, kasbiy kompetensiya, refleksiya, mezonli baholash.

Аннотация:
В данной статье на основе научно-методического подхода анализируется применение форм и методов организации уроков технологии при проведении практических занятий. Обосновывается, что современное технологическое образование не должно ограничиваться передачей технических сведений или механическим повторением трудовых операций, а должно выступать как компетентностно ориентированная педагогическая система, развивающая технологическое мышление, проектную культуру, способность решать проблемные ситуации, культуру безопасности, сотрудничество, профессиональную направленность и творческую деятельность учащихся. В статье раскрываются дидактические возможности фронтальной, индивидуальной, парной, групповой, бригадной, лабораторно-практической, мастерской, проектной и цифрово поддерживаемой форм занятий. Рассматриваются методы объяснения, демонстрации, проблемного обучения, проектной деятельности, кейс-стади, инструкционных карт, технологических карт, совместного обучения, критериального оценивания и рефлексивного анализа. В результате предложена интегративная методическая модель организации практических занятий по технологии, включающая диагностико-подготовительный, мотивационно-проблемный, инструкционно-проектировочный, практико-исполнительский, мониторингово-корректировочный и презентационно-рефлексивный этапы.

Ключевые слова: технологическое образование, практическое занятие, формы урока, педагогические методы, проектный метод, технологическая карта, профессиональная компетентность, рефлексия, критериальное оценивание.

Table 1. Integrated model for organizing practical technology lessons

Stage	Dominant form	Leading methods	Expected pedagogical result
Diagnostic-preparatory	Frontal and individual	Questioning, prior skill check, safety readiness analysis	Learner readiness and resource conditions are clarified
Motivational-problem	Frontal, pair, group	Problem situation, discussion, case question	A meaningful practical need is formed
Instructional-design	Frontal, pair, group	Demonstration, technological map, instruction card	The sequence of operations and safety requirements are understood
Practical-executive	Individual, pair, group, brigade	Guided practice, project work, station rotation	The learner performs technological operations and creates a product or process result
Monitoring-corrective	Pair, group, individual	Formative feedback, peer control, quality checklist	Mistakes are corrected during the process, not after failure becomes fixed
Presentation-reflective	Individual and group	Presentation, criterion-based assessment, reflective analysis	Experience is transformed into conscious competence

INTRODUCTION

Technology education occupies a distinctive and strategically important place in the modern educational system because it connects intellectual development with material activity, theoretical knowledge with real production logic, and personal creativity with socially useful work. In many disciplines, a learner may demonstrate understanding mainly through verbal explanation, written reproduction or formal problem solving, while in technology lessons mastery becomes visible through planning, measuring, selecting materials, using tools, observing safety norms, creating a product, improving a design, justifying decisions and evaluating the quality of the final result. For this reason, a technology lesson cannot be reduced to a short explanation followed by mechanical imitation; it is a deliberately organized pedagogical environment in which the learner experiences the full cycle of technological activity. The contemporary relevance of this issue is connected with several factors. First, the knowledge economy requires young people who are able not only to memorize information but also to apply it in practice, transform ideas into objects, work with materials and digital tools, cooperate in a team and solve non-standard problems. Second, the modernization of education in Uzbekistan has placed strong emphasis on improving educational quality, developing human capital, strengthening practical competencies and preparing competitive specialists for the labor market. The Law of the Republic of Uzbekistan “On Education” defines education as a fundamental social sphere and establishes the legal basis for quality, continuity and accessibility of learning, while the "Uzbekistan–2030" Strategy identifies human development, quality education and the preparation of professionally capable youth as major priorities [1; 2]. Third, international educational frameworks such as the OECD Learning Compass 2030 interpret the future learner as a person capable of agency, responsibility, collaboration, creativity and adaptation to change [3]. These priorities give technology education a special methodological mission: the subject should become a practical field where learners do not merely hear about skills but acquire them through guided activity. The scientific problem considered in this article arises from the contradiction between the high developmental potential of technology lessons and the insufficiently systematic use of organizational forms and teaching methods in practical training. In real pedagogical practice, frontal explanation may dominate even when the task requires independent design; group work may be declared but not supported by role distribution; a project may be assigned but not connected to a real problem; practical work may be assessed only by the external appearance of the product, while planning, safety, cooperation, reasoning and reflection remain outside the evaluation process. As a result, learners may complete an object without understanding the technological logic behind it. The workshop may look active, yet the learner's thinking may be quietly standing in the corner like an unused tool. Therefore, the purpose of this article is to substantiate the application of forms and methods of organizing technology lessons in the conduct of practical training and to develop an integrated methodological model that unites the goals, content, forms, methods, resources, safety requirements, assessment criteria and reflection mechanisms of the lesson. The object of the study is the process of organizing technology lessons, and the subject is the didactic application of lesson forms and teaching methods in practical training. The research tasks are to analyze the theoretical foundations of practice-oriented technology education; to classify the main organizational forms of technology lessons; to identify the didactic functions of effective methods used in practical training; to propose a staged model for conducting practical lessons; and to formulate scientific-methodological recommendations for teachers. The novelty of the article lies in interpreting the practical technology lesson not as a single teaching event but as a complete pedagogical-technological system in which each form and method has a specific function at a specific stage of learning. This approach is especially important for teacher education, because future and practicing teachers of technology must learn to design not only products but also learning situations. A well-organized practical lesson should lead the learner from problem perception to planning, from planning to action, from action to control, and from control to reflection. Only in this case does practical training become a source of technological literacy, professional orientation and personal development.

LITERATURE REVIEW

The theoretical basis of organizing practical training in technology education can be derived from several interconnected pedagogical traditions: activity theory, experiential learning, constructivist pedagogy, competence-based education, project-based learning, instructional design and reflective practice. John Dewey's concept of learning through experience remains one of the most influential foundations because it explains education as the reconstruction of experience through purposeful activity rather than the passive acquisition of ready-made knowledge [4]. For technology lessons, this idea is crucial: a learner understands the meaning of a technological operation not when the teacher names it, but when the learner performs it, encounters a difficulty, compares alternatives and draws a conclusion from the result. David Kolb's experiential learning cycle further clarifies this process by showing that effective learning passes through concrete experience, reflective observation, abstract conceptualization and active experimentation [5]. In practical technology training, this cycle appears when a learner analyzes a task, performs a technological operation, observes the quality of the result, identifies an error, understands its cause and applies the corrected method in a new situation. Vygotsky's theory of the zone of proximal development also has direct methodological value, because many practical operations cannot be mastered by learners independently at the initial stage; they require scaffolding through teacher demonstration, peer support, instruction cards, technological maps and guided questioning [6]. From this perspective, organizational forms such as pair work, small group activity, brigade work and workshop rotation are not merely external arrangements of students in the classroom; they are pedagogical mechanisms for distributing assistance, responsibility and cognitive load. Merrill's first principles of instruction emphasize problem-centered learning, activation of prior knowledge, demonstration, application and integration into real performance [7]. These principles are highly suitable for technology education because a practical lesson should begin with a meaningful task, connect with what learners already know, provide a clear demonstration, require active performance and conclude with transfer or reflection. Project-based learning literature also provides strong support for the use of authentic tasks in technology lessons. Blumenfeld and colleagues showed that project-based learning can sustain motivation when learners work on meaningful problems and produce visible results [8]. Bell emphasized that project-based learning supports twenty-first-century skills such as collaboration, communication and creativity when the learning process is structured around inquiry and production [9]. However, the literature also warns that projects are not automatically effective. A poorly designed project may become a decorative task in which learners produce something attractive but fail to acquire transferable knowledge. Therefore, project-based learning must be combined with clear criteria, staged instruction, formative feedback, technological documentation and reflective discussion. Research on active learning also confirms that learners achieve deeper understanding when they are engaged in purposeful activity rather than passive reception, but active learning requires careful design and alignment between objectives, activities and assessment [10]. In the context of technology education, this means that practical activity must not be confused with random busyness. Cutting, assembling, sewing, modeling, drawing or programming becomes educational only when the learner understands the purpose, follows a method, controls quality and reflects on the result. Competence-based education adds another dimension by shifting attention from content coverage to the learner's ability to use knowledge and skills in real or simulated situations. In technology lessons, competence includes cognitive knowledge of materials and technological processes, psychomotor skill in operating tools, social ability to cooperate, ethical responsibility for safety and ecological awareness in resource use. This broader understanding is consistent with the OECD Learning Compass 2030, which connects knowledge, skills, attitudes and values and emphasizes student agency in uncertain future contexts [3]. In Uzbekistan, normative documents concerning education and national development create a favorable basis for renewing technology lessons through practical and competence-oriented approaches [1; 2]. The literature also highlights the importance of criterion-referenced assessment. Biggs and Tang argue that constructive alignment requires objectives, teaching activities and assessment tasks to support the same learning outcomes [11]. In practical technology lessons, this means that if the objective includes planning, cooperation and safety, then assessment must also measure planning, cooperation and safety, not only the neatness of the product. Hattie's synthesis of educational research stresses the impact of feedback on learning [12]. In practical training, feedback is most useful when it is given during the process rather than only after the product is finished. If a learner incorrectly holds a tool or chooses an unsuitable material, feedback after the final mark is like locking the workshop after the birdhouse has already flown away. Thus, the review of literature shows that effective practical technology lessons require the integration of activity, experience, problem solving, demonstration, cooperation, assessment and reflection. The main gap in practice is not the absence of methods, but the absence of a systematic mechanism that connects forms and methods with specific stages and competence outcomes of the practical lesson.

METHODS

The methodological design of this article is based on a qualitative, analytical and model-building approach aimed at developing a scientifically grounded framework for applying lesson forms and teaching methods in practical technology training. The research is theoretical-methodological in nature, but it is oriented toward real classroom and workshop practice. The system-activity approach serves as the general methodological foundation, because a technology lesson is a structured activity that includes motive, goal, task, means, operation, result, evaluation and reflection. The competence-based approach is used to define learning outcomes not only in terms of knowledge reproduction but also in terms of practical performance, technological reasoning, safety behavior, cooperation, creativity and self-assessment. The design-based approach is used because the teacher of technology acts as a designer of pedagogical situations, while learners act as designers or performers of technological tasks. The research procedure consists of several stages. At the first stage, the main educational and pedagogical sources were analyzed to identify conceptual foundations of practice-oriented learning, including experiential learning, project-based learning, active learning, instructional design and competence-based assessment. At the second stage, organizational forms of technology lessons were classified according to the degree of learner independence, interaction pattern, practical task type and resource conditions. The following forms were distinguished: frontal form, individual form, pair form, group form, brigade form, laboratory-practical form, workshop form, excursion-observation form, project form and blended digital form. At the third stage, teaching methods were classified according to their didactic function: explanatory-informational methods, demonstrative methods, reproductive-practical methods, problem-search methods, project methods, case methods, collaborative methods, digital support methods, formative assessment methods and reflective methods. At the fourth stage, these forms and methods were matched with the stages of a practical lesson. For example, frontal organization and demonstration are most appropriate at the introductory and safety briefing stage; pair work is effective for mutual checking of measurements and operations; group work supports complex practical tasks with role distribution; project work is most effective when learners have sufficient basic skills and can make independent decisions; reflection is necessary at the end of the process to transform activity into conscious learning. At the fifth stage, an integrated model was developed and described through six stages: diagnostic-preparatory, motivational-problem, instructional-design, practical-executive, monitoring-corrective and presentation-reflective. The diagnostic-preparatory stage includes analysis of learners' prior knowledge, readiness for tool use, safety awareness, availability of materials and classroom or workshop conditions. The motivational-problem stage introduces a practical problem that has meaning for learners and connects the lesson with everyday life, local craft traditions, environmental concerns, household technology, simple engineering tasks or professional orientation. The instructional-design stage includes teacher explanation, demonstration, technological mapping, distribution of roles, preparation of materials and safety instruction. The practical-executive stage involves hands-on performance, where learners implement the planned technological process. The monitoring-corrective stage includes teacher observation, peer support, process feedback, safety control and correction of mistakes. The presentation-reflective stage requires learners to present the result, explain decisions, compare the product with criteria, identify mistakes and suggest improvements. This methodological structure makes it possible to analyze practical training not as a sequence of separate classroom events but as a coherent pedagogical mechanism. In order to increase the practical value of the model, assessment indicators were also formulated: understanding of the task, correctness of planning, rational selection of materials, accuracy of operations, observance of safety rules, quality and functionality of the product, creativity, teamwork, ecological responsibility, ability to explain decisions and depth of reflection. The methodological assumption of the study is that the effectiveness of practical training rises when organizational forms and methods are selected according to the learning stage and expected competence outcome, rather than according to habit or fashion. A method is not modern because its name sounds modern; it is modern when it solves a real didactic problem.

RESULTS

The study resulted in the development of an integrated methodological model for applying the forms and methods of organizing technology lessons in the conduct of practical training. The model may be described as the Practical Technology Lesson Integration Model. Its central idea is that a technology lesson becomes educationally productive only when four components are aligned: organizational form, teaching method, technological task and assessment criterion. If the teacher selects a form without a corresponding method, the lesson remains externally organized but internally weak. If the teacher selects a method without a meaningful task, the lesson becomes technique for the sake of technique. If the teacher assigns a task without criteria, learners do not know what quality means. If assessment is limited to the final product, the process of thinking, planning, cooperation and safety remains invisible. The first result of the study is the functional classification of lesson forms for practical training. The frontal form is most effective when introducing a new topic, explaining safety rules, demonstrating a technological operation, comparing examples of product quality or summarizing common mistakes. Its advantage is clarity and time economy, but its limitation is low learner independence; therefore, it should not dominate the whole lesson. The individual form is appropriate when learners perform differentiated tasks, develop personal responsibility, work with technological cards, practice an operation at their own pace or complete a personal mini-project. Its strength is accountability, but its risk is isolation, especially for learners who need support. The pair form is effective for mutual measurement, peer checking, reciprocal instruction, safety observation and quick feedback. One learner may perform an operation while another observes according to a checklist; then they exchange roles. This form teaches both action and attention. The group form is effective for complex practical tasks requiring role distribution. In a small group, one learner may act as designer, another as material manager, another as operator, another as quality controller and another as presenter. Such organization creates conditions for cooperation, but it requires clear rules; otherwise, group work may become a polite system in which one learner works and three learners provide moral support. The brigade or workshop form is suitable for tasks close to production logic, where learners move through technological stations or perform sequential operations. The laboratory-practical form is effective when learners investigate properties of materials, compare processes, test durability, calculate resource use or analyze the relationship between technological conditions and results. The project form is most productive when the lesson aims to create an original product or solve an authentic problem. The blended digital form is effective when digital sketches, simulations, short video instructions, electronic portfolios, QR-coded technological maps or simple 3D models support planning and feedback. The second result is the staged structure of a practical lesson. At the diagnostic-preparatory stage, the teacher identifies what learners already know, what skills they possess, what tools and materials are available and what safety risks exist. At the motivational-problem stage, the teacher formulates a practical challenge. Instead of saying "Today we make a box," the teacher may ask, "How can we design a small organizer from limited material so that it is stable, functional and economical?" This simple shift turns the task from mechanical making into technological thinking. At the instructional-design stage, the teacher demonstrates the operation and introduces a technological map. Demonstration should not be passive; learners should observe the sequence of actions, identify safety points, predict possible errors and ask questions. At the practical-executive stage, learners perform operations individually, in pairs or in groups according to the chosen form. The teacher's role is to supervise, advise, correct and protect safety without taking the task away from learners. At the monitoring-corrective stage, formative assessment is conducted through observation sheets, peer feedback, questions, mini-consultations and process checks. At the presentation-reflective stage, learners present the product or result, explain technological decisions, compare outcomes with criteria and identify possible improvements. The third result is the formulation of assessment criteria for practical technology training. These criteria include: clarity of problem understanding; completeness of planning; correct use of technological documentation; rational material choice; accuracy of measurement and operation; safe handling of tools; efficiency of time and resources; functionality of the product; aesthetic and ergonomic quality; creativity; teamwork; environmental responsibility; ability to justify decisions; and reflective analysis of mistakes. The fourth result is the development of a practical lesson algorithm that teachers can use: define the competence outcome; select a meaningful practical problem; determine the expected product or process; choose the organizational form; select teaching methods for each stage; prepare materials, tools and technological maps; define safety requirements; create assessment criteria; conduct practical work with monitoring; organize presentation and reflection. The model demonstrates that practical training is not simply "doing something with hands." It is a pedagogically directed cycle in which the hand, eye, mind and responsibility work together. The fifth result is the identification of methodological conditions for successful implementation: availability of safe and age-appropriate tools; clarity of instruction; sufficient time for practice; differentiated tasks; integration of local materials and cultural context; connection with real-life needs; teacher competence in managing group dynamics; use of digital tools where they add value; and systematic reflection. These results show that the quality of technology lessons depends less on expensive equipment than on methodological accuracy. A simple task with a clear problem, precise criteria and strong reflection can teach more than a complicated task organized without pedagogical logic.

DISCUSSION

The results obtained in this study confirm that the effectiveness of practical training in technology education depends primarily on the alignment between lesson purpose, organizational form, teaching method, practical task and assessment. This conclusion is important because in contemporary pedagogical discourse there is often a tendency to value methods according to their novelty rather than their function. Teachers may be encouraged to use interactive methods, project methods or digital tools, but the real question is not whether a method is fashionable; the real question is whether it supports the intended learning outcome at a given stage of the lesson. Demonstration, for example, is sometimes considered traditional, yet in technology lessons it remains indispensable when the teacher introduces tool use, safety requirements or a complex operation. The problem is not demonstration itself; the problem is passive demonstration without observation tasks, learner prediction, questioning and follow-up practice. Similarly, group work is often considered progressive, but without role distribution and individual responsibility it may reduce learning quality. Project work can develop creativity and independence, but without criteria, time management and teacher consultation it may turn into improvisation with scissors. Therefore, the teacher of technology needs methodological flexibility rather than loyalty to one method. The same lesson may require frontal explanation at the beginning, pair work during measurement, group cooperation during production, individual reflection at the end and criterion-based assessment throughout the process. The proposed model supports this flexibility by connecting each form and method with a specific pedagogical function. The discussion also shows that practical technology lessons have a strong potential for developing interdisciplinary competence. When learners create a product, they use elements of mathematics in measurement and calculation, physics in understanding material properties and mechanical forces, art in design and aesthetics, ecology in resource saving, language in presentation, and social skills in cooperation. Thus, technology education can become a bridge between school knowledge and life. This bridge, however, must be constructed carefully. If the teacher only gives ready-made instructions and evaluates only neatness, learners may become performers rather than thinkers. If the teacher gives full freedom without structure, learners may become confused experimenters rather than competent designers. The optimal approach is guided independence: enough structure to ensure safety and learning, enough freedom to allow decision-making and creativity. The model also has implications for teacher training. Future technology teachers should be prepared not only to perform operations themselves but also to organize other people's learning through operations. This requires knowledge of didactics, psychology, safety, assessment, materials, digital tools and classroom management. A teacher who is technically skilled but methodologically weak may produce good products personally but fail to develop learners' competence. Conversely, a teacher who knows pedagogical theory but does not understand materials and tools may design beautiful lesson plans that collapse at the first contact with plywood, fabric or wire. Technology education requires both hands and head; preferably both belong to the same teacher. Another important issue is assessment culture. In many practical lessons, assessment is product-centered: the teacher looks at the final object and gives a mark based on neatness or completion. This approach is insufficient because it ignores the process through which competence is formed. A learner who made a less beautiful product but planned carefully, worked safely, corrected mistakes and explained decisions may have achieved deeper learning than a learner whose product looks better because of outside help or imitation. Therefore, assessment must include process indicators. Criterion-referenced assessment makes expectations transparent and helps learners understand what quality means. It also supports fairness because learners are evaluated according to known criteria rather than the teacher's general impression. Reflection is equally important. Without reflection, practical experience may remain unprocessed. Learners should be asked what was difficult, what error occurred, why it happened, how it was corrected and what would be improved next time. These questions turn practical work into learning. The model also supports differentiation. In one class, learners may have different levels of manual skill, confidence, prior experience and creative ability. Differentiated practical tasks can be organized by complexity: basic learners may follow a prepared technological map; intermediate learners may modify dimensions or materials; advanced learners may create an original design and justify it economically or ecologically. This prevents the common situation where some learners are bored while others are lost. Digital tools also deserve balanced discussion. Digitalization should not replace material practice in technology lessons, because learners need tactile experience with tools, materials and processes. However, digital tools can enrich planning, visualization, instruction and reflection. For example, a teacher may use short videos to demonstrate operations, digital sketches to compare design alternatives, simple modeling software to visualize structures, online portfolios to document progress or QR codes to provide access to safety instructions. The key condition is pedagogical purpose. A digital tool that clarifies a process is useful; a digital tool used only to look modern is an expensive poster. Finally, the findings have significance for the national context of Uzbekistan and Karakalpakstan. Technology lessons can support professional orientation, respect for labor, local craft traditions, ecological responsibility and practical readiness for future vocational education. The inclusion of local materials, household needs, regional crafts and community-based problems can make practical training culturally meaningful. When learners design useful objects, repair simple items, model local technological solutions or analyze resource-saving practices, they connect school learning with real life. In this sense, technology education is not a secondary subject; it is one of the places where education becomes visible, useful and human.

CONCLUSION

The article has substantiated that the application of the forms and methods of organizing technology lessons in the conduct of practical training must be approached as an integrated methodological system. Practical training becomes effective when the teacher aligns the educational goal, technological content, organizational form, teaching method, learning resources, safety requirements, assessment criteria and reflection. The study has shown that each form of lesson organization has its own didactic function. Frontal organization is useful for introduction, demonstration and safety instruction; individual work develops responsibility and independence; pair work supports mutual checking and peer learning; group work develops cooperation and role-based performance; brigade and workshop forms bring the lesson closer to production logic; laboratory-practical forms support inquiry into material properties and technological relationships; project forms develop creativity and problem-solving; digital-supported forms enrich visualization, planning, feedback and documentation. Teaching methods such as explanation, demonstration, problem-based learning, project work, case analysis, instruction cards, technological maps, cooperative learning, criterion-referenced assessment and reflection are effective only when they are selected according to the stage and purpose of the practical lesson. The proposed six-stage model — diagnostic-preparatory, motivational-problem, instructional-design, practical-executive, monitoring-corrective and presentation-reflective — provides a scientifically grounded framework for conducting technology lessons. Its advantage is that it transforms practical work from mechanical performance into conscious technological activity. The model also helps teachers avoid two methodological extremes: excessive teacher control that suppresses learner independence and uncontrolled freedom that weakens safety and learning quality. Based on the study, several recommendations can be formulated. First, practical lessons should begin with a meaningful problem or task rather than with a purely formal instruction. Second, technological maps and instruction cards should be used to guide learners without removing their responsibility. Third, assessment criteria should include planning, safety, process quality, cooperation, creativity, product functionality and reflection. Fourth, group work should always include role distribution and individual accountability. Fifth, project tasks should be connected with real-life needs, local materials, cultural traditions and ecological responsibility. Sixth, digital tools should be used as methodological support for visualization, planning and feedback, not as a replacement for hands-on experience. Seventh, reflection should become a mandatory element of each practical lesson because it is reflection that transforms activity into competence. The scientific value of the article lies in the integrated interpretation of practical technology lessons as a competence-forming pedagogical-technological system. The practical value lies in the proposed model and algorithm that can be used by teachers of technology, methodologists and teacher-training institutions. In conclusion, technology education should be understood as a field where learners learn to think with their hands and work with their minds. A properly organized practical lesson teaches not only how to make an object, but how to plan, cooperate, act safely, evaluate quality, correct mistakes and improve the result. Such learning develops a person who is capable, careful, creative and prepared for real technological challenges.

Table 2. Recommended assessment criteria for practical training

Criterion block	Indicators	Assessment focus
Planning	Understanding of task, technological map, material choice, time planning	Checks whether the learner thinks before acting
Process	Accuracy, tool handling, safety, cooperation, correction of mistakes	Measures the quality of practical activity during work
Product	Functionality, durability, aesthetics, ergonomics, economy of resources	Evaluates the visible and useful result
Reflection	Explanation of decisions, identification of errors, improvement proposal	Shows whether experience became learning

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