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Abstract

Work culture development in students with special needs, located at the core of technological education, becomes the main prerequisite in configuring an educational system, compatible with the features of students' psychological and physical development, thus ensuring the quality of individual education in the context of current and future society. In this way, the scientific issue is determined by the importance of work culture formation in students with special needs and the necessity of a pedagogical model elaboration towards achievement of the latter. The elaborated model comprises the social reality and perspective of auxiliary school, the specificity and importance of technological education, the achievement of work culture goals in elementary students with special needs, in accordance with the general phases of mental process formation and their correlation with the stages of work abilities/capacities formation in auxiliary school students. Moreover, it values the principles of work culture formation by means of necessary pedagogical conditions, and implements specific technology of work culture formation in students with special needs.

Keywords: pedagogical model, work culture, special needs, intellectual abilities, pedagogical conditions.

Introduction

Starting from works and studies devoted to special needs, while presenting features determined by the presence of deficiencies in individuals’

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psychological and physical development, as well as the way the process of learning takes place, the auxiliary school surprises through the fact that the subject of Technological Education, together with other subjects, project a unified system of instructive – educational activities, directed towards structuring the teaching technological abilities in students with special needs. Thus, it has a strong influence on the existence of persons with special needs [1, 2].

Auxiliary school technological education comes with a curricular scenario, centered on the formation of useful abilities in students, both for personal, social and professional development, through a series of modules that reflect different fields of activity. This area diversity, extremely useful from a student development perspective, raises a series of didactic problems, the teacher designing the didactic approach in a way, that it facilitates the development of general work abilities/capacities and their life relevance in students, while focusing on attitudinal development [3, 4].

Theoretical Background

According to specialty literature and its data, work culture, which is closely related to the development of general abilities to consciously and independently organize one’s work activity, is approached in psychopedagogy, as a set of general and work-related intellectual abilities (planning, organization, control, activity auto-regulation), as well as a result of personality self-realization [5, 4, 6, 7]. Work culture (WK) is not just a manifestation of skills/abilities and acquired knowledge, but an expression of students’ moral and social qualities. In terms of intellectual and social life development, one can observe that work culture is shaped as a prerequisite and result, that influences individuals’ attitude and conduct.

Our research has been oriented towards supporting the opinion of I. Druțu (1995) [4], I. Sima (1998) [8], aiming at stages/phases of work related operational skills/abilities. The authors point out that operational skills/abilities have their laws, indissolubly linked to the formation of mental actions involved in work activity, general capacities to organize their conscious and independent activity.

Along with A. Roșan [9], G. M. Dulinev [10], S. L. Mirsky [11], E. A. Milerian [12] and others, scientists state that insufficient development of mental processes, lack of specialized, thoroughly automated working skills, as well as activity elaboration and motivation features, are all causes leading to the need of special educational action. Without them, it is not possible to
achieve optimal efficiency in the process of technological education in students with special needs.

Therefore, the constitutive steps are the basis of work culture mechanisms, allowing elementary students to form their mental operations, work skills/abilities, and successful execution of workload.

Analyzing the content and constitutive elements of work culture [4, 8, 5, 13, 7], the features of knowledge, work abilities/skills acquisition in students with special needs [8, 14, 15, 6, 3, 16, 17, 18], the practice of special education, general and special pedagogical principles [19, 20, 21, 22, 1, 18, 3] etc.), we determined the principles that we announced and strictly applied in our research. The principles underpinning WK development in students with special needs (SN) are selected from scientific pedagogical literature [5, 19, 21, 15, 1, 23] and good educational practice.

The aforementioned studies bring theoretical insight to our research. However, since they were carried out on different dimensions of work activity and educational technology (agricultural work, productive workshops, extracurricular activities etc.), their significance diminishes when it comes to our research objective. The above-mentioned investigations do not directly reflect work culture formation in elementary school students in general, and in auxiliary school ones in particular. Nevertheless, the studies have significant conceptual importance to our research.

As a logical consequence of scientific investigations in the field of psychopedagogy, our research summarizes the results of cited research studies, arguing the decisive character of work culture formation for a successful socio-professional integration of students with special needs. Work culture formation must be associated with development of students’ abilities and formation of skills that, while acquired, can become resilient personality traits. These new competences comprise abilities, such as work activity organization, activity planning by means of a rational plan elaboration, discipline, accuracy and precision manifestation, as well as activities of control and self-control in order to get good work results. We agree with the above scholars’ vision and note that, when valuing the formative character of work culture, we emphasize the necessary resources of appropriate methodology.

The adoption of integrative education policies, both globally and nationally, has resulted in extension and crystallization of the “learning” concept through “learning pillars” establishment. The “pillars” defining the learning process are:

- **Learn to know** – involves moving the emphasis from learning content towards learning methodology, endowing the individual with “working tools” rather than knowledge.
Learn to do – involves acquiring knowledge and skills needed to adapt to a society undergoing rapid and permanent change.

Learn to be – assumes positive motivation and attitude towards activity.

These “pillars” are found in the competence structure in terms of: knowledge (allow “to know”), abilities (“to do”), and attitudes (“to be”) [24]. The above mentioned justify curricular components of work culture development pathway in students with special needs, which are represented in the Pedagogical Model by three essential dimensions: cognitive dimension, action-practical dimension and emotional-value dimension.

It has been found that there is a relationship of interdependence and conditionality of work culture dimensions. Thus, the manifestation of action-practical dimension is conditioned by the cognitive dimension, in particular the development of knowledge and work activity organizing skills. At the same time, the process of actual task realization, in which the action-practical dimension manifests, activates students’ mental activity [15]. The study has shown that the degree of interest and emotional attitude towards work activity influences work productivity and solidarity of working rules assimilation. The increased level of moral and volitional skills development contributes to wielding control and self-control abilities and facilitates activity difficulties overcoming. However, the content of work culture action-practical dimension has a positive effect on the development of moral and work-related qualities. The activity’s success leads to a positive emotional attitude towards itself [14, 13, 8].

Argument of the paper

The development of work culture in students with special needs, placed at the core of technological education, becomes the main prerequisite of setting up an educational system compatible with the features of students’ mental and physical development, ensuring the quality of individuals’ education for present and future society [5; 13]. Thus, the realities of work culture development in students with special needs and the lack of a Pedagogical Model for knowledge, work abilities and attitudes formation were highlighted, according to the components of work culture. In this way, the scientific problem is determined by the importance of work culture development in students with special needs as well as by the need to develop a pedagogical model towards this objective.
Arguments to support the thesis

The model of work culture development in students with special needs is derived from the theory of cumulative-hierarchical learning by R. Gagné (phased learning – a more complex learning requiring other simple learning ways development) [25] and the operational theory of learning, developed by Russian professor P. Galperin, so that established mental operations underlie all acquired notions. The author shows that formation of mental operations goes through the following steps:

a. The orientation phase – the teacher verbalizes and demonstrates the operation, children observe how the teacher performs this operation.

b. The phase of actual action – students perform the operation themselves.

c. The verbalizing phase – students pronounce the operation aloud.

d. The internalization phase – students slowly repeat the operation, gradually increasing speed until the action is automated [26].

The developed model includes the social reality and perspective of auxiliary schools, the specificity and importance of technological education, the achievement of work culture development objectives in elementary students with special needs, while following the general stages of mental operations formation and their correlation with stages of work culture abilities/skills development in auxiliary school students. Furthermore, the model aims at valorization of work culture development principles by means of following necessary pedagogical conditions and implementation of technology specific to work culture formation in students with special needs.

The implementation of the Pedagogical Model leads towards achievement of work culture development objectives in auxiliary school elementary students. Adhering to researcher’s I. Nicola opinion, by educational objective we refer to “an anticipated reflection of the learning outcome taking place within an educational sequence” [22 p160].

The deduction of work culture development objectives in elementary students with special needs took into account the official Republic of Moldova documents created according to special education features and reflected in the national curriculum. In this respect, at curricular level, objectives of different degrees of generality were formulated through which students with special needs pass during the course of technological education in general, and work culture formation, in particular. Objectives subordinate to features of special education and align with those of other related disciplines. In this context, several objectives can be highlighted, the development of which ensures formative approach rationalization in order to trigger advanced educational actions of work culture formation:
Organizational/orientation skills/abilities development as an important component of work culture formation in students with special needs

Constructive-technological ability development (work actions projection)

Emotion-based attitude development towards work and learning activity in elementary students with special needs.

The personality of elementary students with special needs cannot develop if they are directed towards dispersed, fractioned studying of various aspects of practical work without correlation and a real interdisciplinary spirit. By means of the National Curriculum for Special Education, all school classes, including Technological Education, correlate and intertwine, condition, complete, and help each other [3]. As a result, only knowledge that is absolutely necessary to open the path to other knowledge and skills has been selected and recorded. Thus, we can distinguish three distinct directions for formulating objectives, according to the dimensions of work culture:

- Cognitive objectives
- Practical skills/abilities related objectives
- Attitude related objectives

The focus was set on assimilation of a determined volume of knowledge, work culture attitudes and practical skills formation. Consequently, we highlight the following priority objectives:

- Knowledge of rules for use of working techniques with various materials and utensils, of workplace safety and security rules during technological processes, rules of workplace organization, workload realization procedures, operation of object/product analysis and comparison, emphasis on the studied object’s or realized product’s essence

- Designing/planning future work activity, making simple products in accordance to pre-established stages, measuring and marking details, assessing work activity, achieved products, undertaking measures for diminishing/avoiding errors, adhering to requirements and indications, necessary for a successful task accomplishment

- Developing the capacity for cooperation in order to achieve a product

- Developing attitude-based, practical and aesthetic sense.

Thus, the Pedagogical Model takes into account and respects special needs students’ necessities and availabilities, aiming, as a whole,
to develop cognitive, praxiological, reflective, value-based, social interaction and communication knowledge and attitudes.

The elaboration of the Pedagogical Model of work culture formation in students with special needs takes into account a set of principles meant to make this extremely complex process more efficient and to achieve it with the utmost responsibility and competence, starting from modern principles imposed by new guidelines in the field of assistance and education of special needs persons [27 p23]. The basic principles guiding the construction of the Pedagogical Model are:

1. The principle of learning individualization, which determines the Pedagogical Model of work culture formation process, expresses the need for dynamic adaptation of the cognitive and action part of instructive-educational content and strategies to psychophysical features of each student, and to differentiated features of some groups of students, in view of their full development as a personality (L. Baba, C. Alexandru, I. Bontaş, D. Gânu, V. Preda, V. Stratan, S. Mirsky, N. Pavlova, V. A. Shinkarenko and others).

Describing curricular adaptations and school progress evaluation in the context of inclusive education (2012), M. Hadârcă and T. Cazacu conclude that the principle of individual and differentiated treatment of students brings beneficial contributions to personality development, whereas ignorance or neglect of these features can lead to children stepping-out of appropriate development conditions [27 p24].

2. The principle of flexibility in didactic activity relates to continuous improvement of conceptual landmarks and teaching/learning technologies in accordance with national socio-cultural requirements and involvement of teaching staff in continuous training activities throughout the course.

3. The principle of participatory education management refers to hiring teachers in dealing with processes and relationships management, regardless of their complexity. This involvement increases the degree of loyalty, motivation, efficiency, and participation in educational system functioning. At the same time, participative educational management also includes students’ participation in didactic activity; accessibility of didactic activity; interaction between theory and practice; crystallization of didactic activity results [28 p31].

The principles applied in teaching activity oriented towards formation of work culture in students with special needs represent general norms that substantiate and guide the conception, organization and
successful development of technological education process. In our research, we approved the following system of teaching principles:

1) **The principle of intuition** expresses the necessity of studying objects, operations, work processes through senses that generate the sensory knowledge of reality and lead to image formation as a starting point for the logical, rational knowledge, thus contributing to unity between sensory and logical components. The nominated principle has a greater weight, being determined by the more active presence of concrete thinking in elementary students. Being conscious of the fact that there can be no logical knowledge without initial sensory knowledge and led by the specifics of teaching children with special needs, in our didactic activities we combined natural didactic material (objects, materials, instruments, utensils) with verbal substitution material (models, drawings, illustrations, graphical representations).

2) **The principle of theory – practice connection** expresses the necessity of combining ideas, actions and applications of learning, or the act of acquiring theoretical knowledge with formation of skills, capacities and abilities. Guided by the fundamental idea that theoretical knowledge is not complete without practical knowledge and vice versa, we achieved this principle through exemplifications, arguments, exercises, didactic activities with applicative, ludic character.

3) **The principle of conscious and active knowledge acquisition** expresses the necessity of understanding the meaning of studied object or process, of making operational, mental and practical effort. In fact, learning must be an act of passing knowledge through one’s own filter of thought. These being noted, the application of this principle was achieved through rhetorical questions, interpretations and connections between old and new knowledge, sequences of modeling-simulation-documentation. In the educational process, the most appropriate methods of teaching-learning-evaluation were the active-participatory ones, that led to conscious and active acquisition of theoretical and practical knowledge.

4) **The principle of systematization and knowledge continuity** suggests that the study material should be structured into coherent methodical units, arranged in a logical and pedagogical sequence, thus forming an informational system. Systematization and continuity of knowledge was achieved either by a linear approach (in 1st and 2nd grades), progressively adding new knowledge, or by a concentric approach (in 2nd and 3rd grades), in which knowledge was resumed on a higher level, or by a linear and concentric approach. If at the beginning of education, the process of knowledge systematization was linear, students learning new knowledge for the first time, at the intermediate stages of the formative experiment, the approach was concentric, reverting to old
knowledge, while at the end of training, the linear and concentric approaches merged to acquire knowledge deepening and specialization. Schemes, tables, technological sheets and models represented the process of knowledge systematization.

5) The principle of knowledge accessibility or age-specific features requires identification of methodological and pedagogical strategies that ensure understanding of integral and complex knowledge. Ensuring knowledge accessibility by observing age specifics of elementary students with special needs has enabled the reception, processing, memorization and reproduction of theoretical and practical knowledge with a certain ease if the formative approach follows the following rules:

- The teaching-learning process develops from simple to complex, from easy to hard, from concrete to abstract.
- The formative route provides a rhythmic study.
- The concurrent use, according to the age of educated, the level of assimilated knowledge and degree of skill formation, general to particular approaches, from abstract to concrete.
- The combining of control with self-control in understanding, memorizing and evaluating knowledge.

6) The principle of individualized and differentiated learning or individual features compliance is closely related to age-specifics principle. The differentiation of learning in our research expresses the adaptation of educational content and strategies to different and individual features of elementary students (individualized instructional tasks, individualized work sheets, etc.). Applying the principle of learning individualization and differentiation has made it possible to capitalize as much as possible individual possibilities and efforts of all students, regardless of their level and type of intelligence.

7) The principle of thorough knowledge acquisition directly reflects the quality of established goals, of contents dealt with, of adopted didactic strategies, of general educational context. The thorough acquisition of knowledge, detached from Technological Education in general and connected to work culture in particular, resulted in skills, capacities and work abilities of elementary students with special needs in developing their adaptability to requirements, norms, cultivation and manifestation of attitude-based work activity, individual and group responsibility spirit formation.

From the perspective of highlighted principles, formative educational activities create prerequisites for development of certain specific capabilities in students, such as use of working techniques with various materials, knowledge of task-achieving procedures, creation of simple products according to predefined stages, measurement and indication of
details, development of cooperation capacity and attitude-based sense etc. Moreover, elementary technological education creates prerequisites for students with special needs to acquire a system of knowledge, abilities and attitudes that would facilitate their work activity and future social and professional integration. The formation of work culture (WC) contributes substantially to this process. From this perspective, we selected a number of necessary and sufficient pedagogical conditions for the effective formation of work culture in elementary students with special needs:

1) Combination of work activity through subject-subject interaction (assisted learning)
2) Student guidance in developing general and individual skills (guided learning)
3) Emotional-based attitude development towards work activity (attitude learning).

These conditions are related to teaching principles, to the content and structure of technological competence (knowledge, skills/abilities and work attitudes) as well as to work culture as an object of research study. The obtained results highlighted the fact that WC, its content and structure are influenced by assimilated knowledge, the level of general skills/capacities and emotional-based attitude development towards work activity. Hence, the components of work culture forming process are:

1. **Knowledge** that represents the ideological, cognitive component, expressed through information in form of notions about materials, instruments, utensils, techniques, procedures, work operations, rules, norms that are taught and learned in Technological Education.

2. **Abilities/capacities** that represent the formative-action component of the learning process, expressed through ability to apply knowledge consciously, actively in similar and varied, changed conditions.

3. **Attitudes** that represent the attitude-based component and develop the power of expressing satisfaction, pleasure, desire to achieve success, avoid failure, need to learn, to structure knowledge, awareness of common activities value, desire to cooperate, cultivate the ability to understand a technological problem, define its data, find a solution.

Considering the features of psychological and physical development of auxiliary school elementary students, the formation of work culture will be effective if common productive activity will be realized in the direction of subject-subject interaction, focusing on assisted and directed learning. At the same time, students will develop emotional-based attitude towards work. Such a construction of the educational process, as well as the experience of national and international auxiliary school led us to elaborate the Pedagogical Model, which represents a system of means, methods, procedures and
techniques that aim, through the common “subject – subject” activity, to
guide students in developing general and individual skills, to strengthen and
expand their knowledge by means of emotional-based development, to
facilitate increase of general work skills and to contribute to formation of
emotional-based attitude towards work activity and its outcomes.

These have also been the arguments according to which three
dimensions have been included in the developed Model:

*The cognitive dimension* (the ideological component of the learning
process) is characterized by:

a) **General knowledge** about work activity (rules for workplace
organization, tools, accessories and devices destination, methods of
using them, sanitary-hygienic norms, work protection and safety
techniques rules during technological processes, procedures for
carrying out the task)

b) **Intellectual culture** (the ability to analyze, compare objects, highlight
studied object essence, classify objects, determine spatial location).

*The action-practical dimension* (the formative-action component of
learning process) involves the following elements:

a) **The action-organizational culture** (the ability to set a goal and to plan
future work activity, the ability to work according to predetermined
stages, to follow requirements and indications (teacher’s indications,
indications from the intuitive-instructive file), necessary to
successfully complete the task.

b) **The culture of control and self-control** (the development of ability to
exercise control/verification and evaluation of work activity, taking
measures of minimization/elimination/avoidance of errors, ability to
operate rationally and effectively with tools and materials, practical
application capacity, or in a new situation, of procedures for
achieving the task, ability to prepare the workplace).

*The emotional-based dimension* (the attitude-based component of
learning process) is manifested by:

a) **Motivational culture** (awareness of knowledge value, desire to
achieve success, avoid failure, satisfaction from successful
completion, desire for acknowledgement by the teacher, parents,
colleagues, manifestation of interest and willingness to work).

b) **Evaluative attitude towards surrounding reality** (awareness of the
importance of studied discipline, the value of common activities)

c) **Culture of communication** (development of communication skills,
development of monologues and dialogue, desire for cooperation)

d) **Reflective culture** (ability to self-regulate the activity, include and
complete the task, the ability to highlight key aspects of the activity
The realization of the Pedagogical Model is based on strategic components reflecting the technology of work culture formation in elementary students with special needs: strategies, contents, forms, methods, techniques, and didactic means.

The essence of the technology is the forms, methods and techniques, means and content.

Teaching strategies are an important place in pedagogical technology. Any strategy, as I. Nicola states, is the result of succession of operations, interaction of several processes, while pursuing multiple educational objectives. Therefore, choosing a strategy is based on informational content (volume, complexity), the concrete situation, cognitive and actional characteristics of students. The coherence between objectives and strategies, content, forms, methods, techniques, means ensures effectiveness of educational activities [22 p374].

The following pedagogical strategies [14, 22, 11] have been used to a major extent in forming work culture of special needs students:

1. Cognitive, action-based and attitude-based – by the nature of objectives on which they are centered
2. Imitative, explanatory-reproductive (exhibiting), explanatory-intuitive (demonstrative) – by the degree of learning direction

The main constitutive elements of didactic strategy were:

- The system of organization forms and development of training activity
- The methodological system, the system of didactic methods and procedures
- The system of educational means

The forms of educational activity organization are “organizational structures for the effective realization of teaching and learning within the organized framework of institutionalized education” [21 p303]. At the same time, they refer to curricular didactic activities (lessons, practical activities, projects that emphasize students' interests and independent activity, the role of the teacher as a guide) and extracurricular forms (meetings, occupational therapies).

Methods are an important component of both didactic strategies and technology representing the path system, adequate ways to ensure effective organization and completion of teaching and learning [29 p18]. In the formative approach, the following teaching/learning methods were applied: communication (explanation, description, storytelling, instruction, and conversation), exploration (observation, demonstration of
objects/samples/actions, procedures/techniques, modeling) and action (exercises, activities/practical works, and games) [14, 11].

Another component of our strategy is the didactic technique. According to researcher I. Bontaş, “didactic techniques are a combination of procedures – practical didactic solutions, accompanied, where appropriate, by means, for effective realization of didactic activities” [19 p 160].

A presentation using means of education, “designating all designed explicit material resources” meant to facilitate knowledge transfer, skills formation, the evaluation of some acquisitions, the realization of practical applications within educational process, allows a faster assimilation and a more intense activity [30 p297].

The basic component of the Pedagogical Model are the endpoints. The endpoints formulated within the Model express learning outcomes in terms of knowledge, skills/work abilities and attitudes. These results describe the purpose of learning: formation of work culture in elementary students with special needs. Through this, the endpoint of the formative experiment has an integrating aspect that reflects defining dimensions of work culture formation in elementary students that provide the social perspective of educational action.

Conclusions

In practical terms, the endpoint of work culture formation process expresses the student's ability to value the system of knowledge, abilities and attitudes specific to an activity, whether work-related or not. Thus, the Pedagogical Model of Work Culture Formation in Students with Special Needs represents an offer to integrate theory and practice in addressing the problem at hand, taking into account the specificity of the educational approach. It is certain that maintenance of work culture influences not only the specificity of educational approach, but also the social objectives of auxiliary school, reflected in the Republic of Moldova Education Code.

The pedagogical model approaches Technological Education as a discipline that contributes to the formation of students’ personality, along with other general culture classes, by initiation in technical and practical training regarding knowledge of materials, processing technologies, tools and accessories, ways of organizing technological processes. The model also focuses on increasing availability of products’ quality and reliability achievement through formation of important work culture components – formation of organizational/orientative skills/abilities, constructive-
technological abilities (work actions design) and development of attitude-based work and learning activity.

References


