The Main Characteristics of Stages of Content and Technology in Continuing Pedagogical Education

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Abstract

The study underlined five stages' characteristics of content and technology in pedagogical education stated in "The Concept and Strategy of Continuous Pedagogical Education and Teacher Training of the Republic of Azerbaijan". These traits have been determined through studying the foundational works of selected scholars as well as best practices. The five stages of pedagogical education content and technology are self-determination, self-organization, scientific-pedagogical formation, pedagogical self-improvement, and self-realization. According to the document, every stage belongs to a certain degree of education, such as bachelor's degree, master's degree, advanced training, and doctor of philosophy. This analysis found that all five phases have excellent chances of being applied within each degree rather than between degrees. The approaches of a few scholars provide the foundation for such a judgment. The characteristics of each of the five stages of pedagogical education will be critical in the creation of a content model for continuous pedagogical education aimed at highly professional teacher education. The study presents a rich foundation for future research in this field.

Keywords

Continuous Pedagogical Education, Degrees of Education, Content and Technology Stages, Stage Characteristics

1. Introduction

The quality of education in a personality-oriented education system is determined by the steady development of the teacher as a personality. In this regard,

the establishment of a teacher's pedagogical beliefs, labor culture, social responsibility, professional knowledge and abilities, creative thinking, organizational and management skills is critical. While the content of education, particularly pedagogical education, is continually updated in response to socioeconomic, scientific, and technological developments, the question of systematization of the scientific and practical foundation of "personality-teacher" education becomes significant. The current research was driven by this need.

The Concept and Strategy of Continuous Pedagogical Education and Teacher Training of the Republic of Azerbaijan, developed with the support of international consultants, is particularly noteworthy in terms of establishing such a system in teacher education. The phrase "stages of organization of content and technologies of pedagogical education" appears in paragraph 2.9 of the mentioned document approved by the Cabinet of Ministers of the Republic of Azerbaijan in the 2007 year. According to the document, in the first stage of "self-determination," the student perceives himself as a subject of pedagogical activity and becomes acquainted with the simplest model or real form of pedagogical practice. The second stage, "self-organization," is the entry of the future teacher into the culture of pedagogical work and its self-organization. At this stage, the goal is to develop skills in designing, implementing, and improving pedagogical activities by applying newly acquired knowledge, as well as to feel like a professional teacher. Third, it is intended to develop the subject's pedagogical ability for scientific and pedagogical activity at the stage of "scientific and pedagogical formation". The fourth stage, "pedagogical self-improvement," is defined as the acquisition of new knowledge and the modeling of pedagogical activity on its basis, as well as the creation and implementation of specific pedagogical technologies and methods. The fifth and final stages are intended to improve the teacher's ability to design and implement innovative educational activities.

According to the document, distinct stages of content and technology in pedagogical education are related to different degrees of pedagogical education. That is, "stages" are defined as the primary factor that provides a transition between degrees of education. Thus, the future teacher will be able to self-identify in the upper grades of general education, self-organize in the initial pedagogical education, be scientifically and pedagogically formed at the master's degree, and self-improve in the first years of his or her activity as a teacher. They go through the stages of "self-realization" as a researcher while designing innovative activities at a doctorate. Table 1 shows how the preceding may be comprehended.

The five stages of content and technology of continuous pedagogical education are investigated in this study in terms of providing these stages within each degree. This method is illustrated in Table 2.

The goal of this study is to identify key characteristics of pedagogical education stages such as self-determination, self-organization, scientific-pedagogical formation, scientific-pedagogical self-improvement, and self-realization in order to organize content and technology phasing at every level of pedagogical education.

Table 1. Distinct stage represents a different degree of education.

Continuous pedagogical education degrees	General education	Vocational	High education		Additional education	Doctorate
		College	Bachelor's degree	Master's degree	Professional development Retraining	Doctor of Philosophy PhD
Stage between levels	Self-determination	Self-organized		Scientific and pedagogical formation	Scientific and pedagogical self-improvement	Self-realization

Table 2. Every stage is applicable to every level of study.

Levels of education general	General education	Vocational	High education	Additional education	Doctorate
		College	Bachelor's degree	Master's degree	Professional development Retraining	Doctor of Philosophy PhD
Phase I:	Professionally self-determined self	Self-determination in terms of profession and specialty	Be self-determined in terms of specialization	Self-determination in terms of the subject of the course determine	Determine yourself in terms of the topic to be studied
Phase II:		Self-organized in terms of profession and specialty	Self-organized in terms of specialization	Self-organized in terms of the subject of the course	Self-organized in terms of the subject to be studied phase
Phase III:		Scientific and pedagogical formation in terms of profession and specialty scientific	Scientific and pedagogical formation in terms of specialization	Scientific and pedagogical formation in terms of the subject of the course	Scientific and pedagogical formation in terms of the topic to be studied phase
Phase IV		Scientific and pedagogical self-improvement in terms of profession and specialty scientific	Scientific and pedagogical self-improvement in terms of specialization	Scientific and pedagogical self-improvement in terms of the subject of the course	Scientific and pedagogical self-improvement in terms of the topic to be studied phase
Phase V:		Self-realization in terms of profession and specialty	Self-realization in terms of specialization	Self-realization in terms of the subject of the course	Self-realization in terms of the subject to be studied

Research questions:

1) What are the main characteristics of the content and technology stages associated with different levels of continuing pedagogical education?

2) Is it possible to represent all of these stages in the content of each level of pedagogical education?

2. Methodology

The proposed study was carried out using the qualitative research methods listed below. This is a review based on an existing literature search. This review focuses on specific aspects of the methodology for the conduct of a re-

search/clinical trial. Our sample of search systems covers a range of types of technology (Google Scholar, Scopus, Web of Science), target audience (managers and professors engaged in the organization and implementation of pedagogical education). The relevant keywords for literature search include "pedagogical education", "self-determination", "self-organization", "pedagogical formation", "self-improvement", "self-realization", "content and technology of education", "stage characteristics" alone and in combinations. Searching was conducted with the following strategies: selection of search terms, searching with keywords, search by exact word combinations, search by thematic names, and using Boolean logic. For systematic reviews and meta-analyses across all databases available, the bibliographies of the articles were specifically searched from the search engines and manually from the print books and journals in the library. There were 72 sources which include dictionaries, encyclopedias, dissertations, journal articles, publications with DOIs, online documents, books, textbooks, and social networks.

Analysis of results: A different approach to the gradual organization of the content and technology of continuing pedagogical education necessitates a study of these stages' characteristics from a different perspective. In this direction, the essence of each stage of self-determination, self-organization, scientific-pedagogical formation, scientific-pedagogical self-improvement, and self-realization has been studied and analyzed from philosophical, psychological, sociological, and pedagogical research. Theoretical and practical perspectives are studied and generalized.

Characteristics of the self-determination stage "Self-determination" is the first stage of the content and technology of continuous pedagogical education. "The topic of self-determination is as ancient as the globe" (The Great Psychological Encyclopedia, 2005). What motivates a person to try to recognize himself? "All ancient literature and current intellectuals' works deal with this subject in some way" (p. 524). In the XII century, thinker-poet Nizami Ganjavi (1141-1209) advised his son Mohammed to study the world and to be aware of him-self in his work "Seven beauties." Nizami expects a person to understand himself. When we consider the Renaissance as a "discovery of nature and man," we can see Nizami's point of view more clearly. Knowing one's place in life and society, distinguishing between good and evil, and being able to choose the right path in the face of complex and contradictory events are all examples of self-awareness. He described someone who was not "aware" of himself as "entering the world through one door and leaving through the other".

According to Russian pedagogical encyclopedia (1993), "the central mechanism for the formation of individual maturity, which consists of the conscious choice of one's place in the system of social relations." The need for self-reliance is characterized by the individual's desire to take an independent position in terms of information, ideology, professionalism, and emotion, indicating that the individual has reached a high level of development. Although Popular Psychological Encyclopedia (2005) claims that there is no significant difference be-

tween the concepts of "self-awareness" and "self-determination," it is noted that there are some subtle differences: "If we are not talking about intragroup or professional self-determination, but about individual self-identification (identification, identity), then this concept is perceived as self-awareness." The broad social character is emphasized as the primary feature of "self-determination" in this context. This point is reaffirmed in the Encyclopedia of Philosophy (2005): "The self-determined man clarifies for himself: he is not only a man who has chosen to be himself but also a legislator, a perfect and complete man who has chosen all mankind for himself. Such a person is unlikely to be free of a strong sense of responsibility." These points of view also emphasize the nature of "self-determination" as a responsibility. According to the Newest Philosophical Dictionary (2001), "self-determination" is "the process and result of a person's choice of his life position and goals; it is the basic mechanism by which a person acquires and manifests freedom." A person's self-determination in life, according to the dictionary, is a person's integration into the value system. The subject is no longer just a human being but is defined in the sociocultural space by values and identity.

The theory of self-determination was first presented in the book "Internal Motivation in Self-Determination and Human Behavior" by psychologists Edward Deci and Richard Ryan (1985). Later, philosophers, sociologists, and psychologists (Freeman, 2019; Khmil & Korkh, 2017; Pryazhnikov, 1999, and others) undertook extensive and diverse studies in this area.

Freeman M. believes that as a moral value bearer, everyone must respect the dignity and autonomy of others, which is the right to self-determination (2019). Self-determination, according to M. Freeman, is a human right based on the values of individual and collective freedom. The author believes that self-determination is only beneficial if the "self" is kind and has a good definition. As a result, self-determination as a value must be viewed in the context of the broader values of democracy, human rights, and justice. All of the preceding describes the legal nature of the "self."

The concept of self-determination is used in many fields around the world, including education, work, parenting, sports, and health. The fulfillment of the three innate and secular needs of humans, such as ability, connection, and autonomy, is considered a necessary condition for self-determination to occur in the theory of self-determination. It has been demonstrated that humans can achieve success in a variety of areas of life.

Professional self-determination is presented as an SELF concept for individuals. This includes a person's excitement, intention, professional activity, perception of a particular social situation, and "self's place in all of the above" (Tikhomirova, 2009). Several types of literature express the view of professional self-determination as a multidimensional process involving sociological, sociopsychological, and differential psychological components (Pryazhnikov, 2005, 2007; Zeer, Pavlova, & Sadovnikova, 2004). In a sociological sense, professional self-determination is regarded as one of the tasks assigned by society to the de-

veloping personality. From a socio-psychological standpoint, self-determination refers to the processes of establishing and developing a balance between the preferences and interests of the individual and the needs of society. From the standpoint of the differential psychological component, it was emphasized that it is expressed in the professional self-determination of the future teacher in the process of forming an individual professional lifestyle, particularly pedagogical activity. These components, as stated above, include self-determination experiences, intentions, professional actions, specific social conditions, and a person's perception of their place (Tikhomirova, 2009).

The main goal of professional self-determination, according to N. S. Pryazhnikov (1999), in "The Theory and Practice of Professional Self-determination," is the consciously independent formation of a person, the regulation of development prospects, and the gradual internal preparation for its implementation. He also believes that one of the goals of professional self-determination is to conduct an independent investigation into the significance of any professional activity.

Richard M. Ryan and Edward L. Deci (2000) presented the sustainability of self-development in humans in self-determination theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being, which was also considered important in determining the difference between a self-determined person and a nonself-determined person. Therefore, in contrast to persons who are not self-determined, a self-determined person has inner motivation and is internally adaptable, delicious, compatible, and fulfilled. The authors believe that in a job context such as teaching, being more intrinsically driven or self-determined can lead to greater performance. They discovered that a teacher with high internal motivation is more diligent in school activities and learning and that students of such teachers are also motivated. Teachers who lack internal motivation are uninterested in their work because they do not enjoy it.

Klimov E. A. divides professional self-determination into two levels in his study of professional-pedagogical self-determination: 1) gnostic (consciousness and self-consciousness reconstruction) and 2) practical (real changes in a person's social status). Pryazhnikov (1999: p. 18) defines professional self-determination as searching for and discovering personal meaning in chosen, mastered, and previously performed work activities. He accepts self-determination as "man's ability to establish its individual history, their continuous rethinking of the nature of power."

A. B. Tikhomirova (2009), in agreement with M. R. Qinzburg, S. Kon, A. K. Markova, and N. S. Prajnikov noted that individual self-determination should be taken into account in the educational process at the university in the initial stages of professionalization and justified the importance of these views with the rapid development of a personality-oriented educational paradigm in psychology and pedagogy. People succeed when they are convinced that they are doing what they believe in. The growing self-confidence of a person results from the conviction of his autonomy that his decisions are based on free thought, and he

becomes more competent. In any case, future teachers' professional self-determination implies the development of a subjective attitude toward specific labor activities, labor market mobility, and the ability to adapt to changing market trends. Professional self-determination, such as personal self-determination, should be valued in this regard (Tikhomirova, 2009).

In the "Newest Dictionary of Philosophy" (Новейший философский словарь) (1999), "self-determination" is defined differently in the area of education: "Along with the process of information transmission in education, there is another process, the transfer of ways of self-determination." Education is a field that produces precedents and instances of self-determination. The idea of self-determination highlights the issue of education's "goal." A person or a class cannot be an object. Only through the process of selecting, researching, and updating educational material (objects, events, symbols, models, situations, values, activities, relationships, psychological climate) can self-determination and self-development occur. Self-determination is the foundation of innovative pedagogy, which focuses on new types of education and new teaching materials. This alters both the materials and subjects of education, as well as their interaction. Indeed, the sociocultural changes that are occurring in society today lead to the formation of a new mentality in the teaching profession, which results in a change in the nature and values of pedagogical activity. The teacher becomes a social force, influencing adolescents and young people to be more successful in their new sociocultural environment. Young people's success is conditioned by a high level of agility, competitiveness, civic responsibility, constructiveness, dynamism, and moral qualities, which necessitate a shift in pedagogical practice. The content of general education, as well as the content and technology of pedagogical education, are both influenced by the social order. This brings about new pedagogical realities in higher education institutions. The philosophical, psychological, and social self-determination of a teacher, operating in a rapidly changing environment and meeting society's sociocultural needs, is the first step in the content and technology of continuous pedagogical education and provides a systematic approach to the issue. Zavrazhnov (2010) covered important issues from a philosophical, psychological, and sociological standpoint in his doctoral dissertation, which took an emotional and rational approach to support professional self-determination. V. V. Zavrajnov noted features arising from the initial diagnosis of future psychologists and teachers involved in self-determination in the first year of education while compiling the model of professional self-determination. According to the author, a significant proportion of first-year students (approximately 50%) have the following characteristics: little different perceptions of the content of the teacher's professional activity, inadequate self-assessment in terms of professional qualities and perspectives, poor professional interaction with different categories of students and partners, lack of motivation, and uncertainty about the workplace.

As a result, we reviewed dozens of researches studies on the main characteris-

tics of "self-determination," and the importance of this stage in the development of a personality has been highly valued in separate studies. The following are the main characteristics:

- Conscious choice of one's place, one's position in life, one's goals in professional activity;
- Building one's personal history, thinking about one's essence;
- Defining one's "way of life"; confidence that one's decisions are based on free thinking;
- Perception of oneself as a subject of pedagogical activity;
- Formation of a "subjective attitude toward specific labor activities";
- Gradual internal training in the regulation and implementation of development prospects;
- Orientation to innovative types of education and innovative teaching materials;
- Identification of their values and position in the sociocultural space;
- Emotional and rational responses to important questions about the profession and critical issues such as "what?" "why?" "how?" and "under what circumstances?"

These characteristics are evaluated in terms of content and technology for continuous pedagogical education. The following are the findings:

1) Future teachers' or current pedagogical staff's self-determination in their field of specialization, with numerous opportunities to combine social order with personal professional beliefs in the presence of various pedagogical systems, technologies, and approaches, as well as diverse training and education experiences;

2) From a philosophical (why will it be taught), intellectual (what will be taught, how will it be taught), and sociopsychological (under what conditions) standpoint, "self-determination", the first stage of content for all levels of continuing pedagogical education, is a foundation of high motivation related to the field in which the student specializes.

3) Forming as someone who connects the reasons for engaging in pedagogical activity with internal conditions (thoughts, desires, interests, etc.) rather than external conditions (parental stimulation, friend's recommendation), is internally regulated, enjoys work, and is most suitable for himself and society provides.

3. Characteristics of the Self-Organization Stage

The second stage of the content and technologies of continuous pedagogical education is "self-organization." The term "self-organization" has been applied to a wide range of contexts and fields. "Self-organization, the organization of the process of creating, repeating, or improving a complex dynamic system," according to the Philosophical encyclopedic dictionary (2010). According to Encyclopedia of Epistemology and Philosophy (2009), "self-organized processes of

spontaneous regulation occur in open, nonlinear systems in space, time, space-time, or functional structures." Self-organizational characteristics can be found in a variety of natural objects, including cells, organisms, biological beings, and human groups.

As mantioned Gershenson (2007), "the term self-organization has been used in different areas with different meanings, as in, thermodynamics, biology, mathematics, computer science (Heylighen & Gershenson, 2003), complexity, information theory, evolution of language, synergetics, and others". He observes that despite so much research and "abundance of praise," there is almost no agreed-upon definition of "self-organization." Gershensona (2007) defined it as "complex systems with many parts that organize themselves to achieve a stable state in the absence of external interference." According to Heylighen and Gershenson (2003), it is "the spontaneous formation and preservation of a functional structure." They believe that the controls required to accomplish this are distributed across all participating components. If control was centralized in a subsystem or module, this module could theoretically be deleted, causing the system to lose its organization. These views are consistent with those expressed by cyberneticist Ashby (1947) in his 1947 book, Principles of Self-Organizing Dynamic Systems. According to the scientist, each subsystem in a self-organizing dynamic system adapts to the environment created by all other subsystems. In the years that followed, scientists (I. Prigozhin, G. Haken, Jean-Marie Lehn, AP Rudenko) began to use the term "self-organization" when explaining system theories (Andreeva, et al., 2020). In all interpretations of the term "self-organization," "self" is not separated from "organization," and self-organization is depicted as a self-active system. This can be accomplished by setting goals based on the individual's inner mood, mobilizing internal forces, and cultivating positive thoughts, models, and external conditions. Self-organization is always based on the active position of the individual.

Self-organization is manifested practically primarily in a person's self-regulation or the mechanisms that manage his physiological, psychological, and behavioral states. Thus, self-organization leads to a more psychologically precise level, self-government (Ogaryev, 1995). As part of a synergetic approach (increasing one element of the system while satisfying other elements), scientists' interpretation of "self-organization" has become interdisciplinary and gradually shifted to psychological and pedagogical research (Andreeva et al., 2020), and interesting ideas in this direction have been proposed.

"Self-organization" is defined as "a single ability to regulate natural, mental, personal situations, qualities, and characteristics, manifested in behavioral motives realized by voluntary and intellectual mechanisms" by the Acmeological dictionary (2004). The self-organization of the personality, according to M. Dyachenko (1998: p. 45), is "an inseparable set of perceived features of the will and intelligence, behavioral motives, acquired natural and social characteristics, realized in the order of action and behavior."

"The comprehensive development of a person is the ability to successfully

perform conscious work on himself to raise their level of professionalism, to develop their characteristics and abilities," writes Dudnik (2009: p. 101). According to L. Bobrova (2014), "the ability to rationally organize their professional activities and to implement them step by step and increase the efficiency of the process … the ability to take into account the intermediate results in the conscious application of experience". Filonenko & Petkov (2014) also believes that "professional self-determination is necessary to optimize actions, to be able to combine their efforts with those of colleagues, to define the boundaries of professional activity, and to ensure the success of activities." The author thinks that the formation of professional self-organization is inextricably linked to the dynamics of individual development and has a unique character in each situation. According to Zaenutdinova (2000), a self-organized individual, is a process of regular activity in which a person consciously organizes his activities and manages himself to achieve the set goals. The perspectives of Dmitrenko (2012), V. Goryunka (1997), and Derkach (2004) on "professional self-organization" are also relevant to the problem. N. Dmitrenko and A. Barvenko (2012) consider self-organization to be "a professional in professional activity ... an important personal feature of a specialist". It is "an indicator of individual maturity and professionalism, as an internal motivating component that constantly encourages people to increase their professional knowledge," according to V. Goryunka (1997). Derkach (2004) considers "a systemic quality manifested in internal stimulators, which ensures the effectiveness of activities, regardless of their content and specificity, and ensures the active development of a specialist, the realization of creative potential".

The ability of "professional self-organization" is defined as follows by 92. Pedagogical encyclopedic dictionary (2002): "Professional self-organization acts as a subject of a person's professional self-development." It is the mastery of rational methods of carrying out activities aimed at completing tasks of professional and personal significance. Practical and theoretical skills can be acquired.

After reviewing selected papers on "self-organization," it was determined that the process consists of the following steps: the individual determines his potential (physical-physiological, emotional, social-psychological, cognitive-cognitive); evaluates the environment and conditions; and finally defines a rationally organized system of activities aimed at a specific goal. This comprises the ability to plan actions, implement them step by step, and consider the intermediate results of previous experience to improve the process efficiency. In pedagogy, the processes of professional self-development, self-realization, self-expression, self-awareness, self-development, and self-education are all strongly tied to "self-organization."

All of these principles, according to the pedagogical encyclopedia, are characterized by a conscious, deliberate activity controlled by the man himself. As a result, the process of self-organization is always manifested in the individual's self-orientation. "Self-organization" is considered a competence by certain pedagogy researchers. Noskova T. (2009) examined the phenomenon of

"self-organization skills" and sought to determine what it was all about. They stressed that self-organization abilities are the most important competency in a student's professional pedagogical training as a future teacher, and they highlighted the three primary components of this competency (target, reflection, and individual). These elements, according to the authors, determine the structure and components of self-organization. What does this competency look like in the classroom? The main responsibility of a teacher, according to Noskova, is to govern the freedom of action of students. In other words, the instructor's interests, aims, and objectives, as well as the educational goals and objectives provided by the teacher, are to create conditions for the student to make the proper choice and decision. As a result, the student becomes a topic of student activity management and actively participates in the self-government process. Self-organizing competence (p. 81) is superior to knowledge, skills, and habits in terms of overcoming stereotypes, feeling and penetrating the situation, and flexible thinking. It attributes independence, purposefulness, and volitional aspects to this competency. "Self-organization competence is a mix of knowledge, skills, habits, and work experience, as well as a system of personality traits that offer self-organization, self-management, and adaptation to the conditions of the professional environment," the authors write (p. 81). As a result, in vocational and pedagogical training, a student's self-organization meets all of the following competency requirements:

- Is subject-specific (formed and functions inside several interconnected scientific natures, not just one, allowing meta-tasks to be solved);
- It is multifunctional in the sense that mastery enables one to handle a variety of problems in professional, social, and everyday life, not only for oneself but also for students;
- It is multifaceted because it represents knowledge, action approaches, and personal traits. (S. Kulikova and T. Noskova, p. 5)

In the research, Naskova (2009), Gershenson (2007), Filonenko V. A. & Petkov V. A. (2014), and Faleeva L. V. (2009) established a system of professional self-organization development. Although these systems differ from one another at times, they frequently overlap. Faleeva (2009) introduces to the phases of self-organized design, execution, and monitoring/evaluation, outlining the sequence of activities for each phase as follows: design (ability to plan activities, act quickly, predict decision outcomes, and creat development and self-improvement strategies); execution (independent decision-making, accepting responsibility, constructive business communication); control and evaluation (adequate evaluation of the results of their activities, control over their activities). Filonenko & Petkov (2014) present the self-organization model as a set of skills: the ability to determine one's professional destiny; professional self-organization diagnostic forecasting skills; professional self-organization design skills; professional self-organization organizational and creative skills; professional self-regulation skills. Popova N. P. (1999) sees professional self-organization in the collection of "the ability to use their intellectual and emotional-volitional features." Noskova

believes that future education managers should be taught the following skills to organize their professional activities:

- Set goals and formulate the tasks required to achieve them;
- Plan the measures envisaged for the implementation of educational management activities in accordance with goal;
- Coordinate the planned activities with real-world conditions. • to objectively assess the state of affairs and make action decisions;
- To carry out activities consciously and purposefully to achieve results;
- To achieve the final result at the end of the activity; and
- To adequately evaluate and correct the result.

Gershenson's system was superior to the other systems studied in terms of accuracy and practicality. As a result, Gershenson introduced a system of self-organization rather than a system that fosters self-organization. This system reflects a suitable conceptual framework for achieving self-organization in any context. The adaptability and diversity of Gershenson's approach are thought to be significant in the development of self-organization in pedagogy. A self-organizing system, according to Gershenson, is more than just a type of system. It is a way of thinking about learning, understanding, designing, managing, and building. F. Heylighen & C. Gershenson (2003) describe how the pieces of this complicated system interact with one another. As a result, the actions of one element might affect other elements directly or indirectly.

As a result, a large amount of scientific literature was analyzed to determine the characteristics of the "self-organization" as a stage of content and technology of pedagogical education, and it was discovered that this stage is characterized in individual studies as follows:

- The emergence of order in a system through internal processes rather than external constraints or forces;
- The adaptation of each subsystem in a dynamic system to the environment created by all other subsystems;
- After identifying their potential and assessing the environment and conditions, the individual identifies goal-oriented activities without outside interference;
- Development of a pedagogical labor culture based on an active position with independence, purposefulness, and other volitional qualities;
- Self-command, self-stimulation, control over actions and behavior to increase the level of professionalism;
- Regulation of natural, mental, and personal situations, qualities, and characteristics;
- Someone who overcomes stereotypes feels the problem, penetrates it, thinks quickly;
- Conscious arrangement of regular activities targeted at goal completion using reasonable techniques of execution;
- To maximize one's activities, to integrate one's efforts with those of colleagues, and to set the bounds of professional engagement;

-   Multidimensional, multidisciplinary, and multifunctional.

When the aforementioned features are applied to the content and technology of continuous pedagogical education, the following results are obtained:

2) The "self-organization" of a future teacher or present pedagogical staff in their field of expertise provides independent, deliberate internal control by analyzing the environment and conditions, considering its potential, and not relying on external influences and interventions;

2) Establishes conditions for regular activity in the performance of professional duties, including an understanding of the opportunities and limitations of their activities and the establishment of boundaries;

3) The awareness of the inadequacy of knowledge and skills in subject matters alone, and the requirement for subject knowledge and skills to execute the obligations assigned to the professional activity ensures the activity's multidimensionality and multifunctionality.

4. Characteristics of the Scientific and Pedagogical Formation Stage

The scientific and pedagogical formation stage is the third of five stages in the organization of the content and technology of continuous pedagogical education. One of the key criteria for the creation of a teacher as a professional at this level is the scientific and pedagogical value of the content and technology of pedagogical education.

This phrase is defined as "a system of teacher preparation for general (preschool, primary, basic, and secondary) education" in the Pedagogical terminology dictionary (2006). According to the dictionary, "pedagogical image acquisition" aims to solve two interrelated tasks: first, promoting the social development of future teachers (basic general cultural training, moral and civic development) and second, promoting professional development and specialization in a specific field of pedagogical activity. "The contemporary personality-oriented paradigm that drives the regeneration of pedagogical education is based on cultural-historical and activity-based approaches to human ontogenesis and phylogenesis processes (L. S. Vygotsky, A. N. Leontyev, D. B. Elkonin, E. V. Ilyenkov, V. V. Davydov and others). This idea is linked to an emphasis on self-development and self-realization in individuals. Subject study is utilized as a tool to train future teachers rather than as an end in itself." (2006)

Radosavljevich (2012) states in his paper "Pedagogy as a Science" that "systematic pedagogy means scientific pedagogy." It varies from empirical compilations of historical data in that it is grounded on scientific and general realities. In a statement on the European scientific and pedagogical approach, Zogla (2018) points out that it is considered a comprehensive, whole human development, so the learner is given a complete package (sustained pedagogical support of the body, emotions, creative mind and spirit in social conditions). He agrees that education fosters scientific investigation and study by examining and research-

ing experiments, inventing scientific techniques, classifying them, and revealing other important parts of science. This is where scientific pedagogy and practical education diverge. He points out that pedagogy has progressed beyond simple teaching methods to the point where it is a personal philosophy manifested in the professional behavior of the instructor. Scientific pedagogy, as opposed to practical pedagogy, avoids reducing pedagogy to the level of teaching techniques and instead focuses on the integration of both aspects of planned education: the learning process and learning outcomes, as well as the transformation of educational value (Ziogla, 2018).

The research of Ilyasov M. (2018) on the scientific and pedagogical formation of teachers drew attention. Ilyasov believes that a teacher's professionalism and competence are defined by their capacity to carry out their instructional activities in a professional manner and with a competent attitude to this process. In other words, it entails a thorough understanding of all the nuances of the profession, mastery of the educational activity, and the ability to handle problems scientifically and using the most appropriate ways. Creative thinking, innovation tendencies, needs, particular educational abilities, independence, excitement, responsibility, and love are all required for pedagogical competency.

According to Mirzayev F. and Rustamova Kh. (2012), the prerequisites for teacher qualification and systematic training are as follows: thorough knowledge of the subject taught; systematic study of innovations in the relevant field of science; mastering the technology of teaching the subject; learning and applying creative best practices in their specialty; constant self-development, methodical creativity; and gaining pedagogical professionalism (p. 20)

Mynbaeva A. K. (2013) saw scientific activity in higher education institutions as a complement to the pedagogical process, emphasizing the similarities between teaching and research. She emphasized the connection between scientific activity and inventions, indicating that the university's instructional process is now fully integrated with the innovation process. The author emphasizes the role of the teacher as a researcher and the student as a scientific inventor and how their work takes on new meaning. (p. 59). A. K. Minbayeva evaluated higher pedagogical education as a process and a scientific activity and linked its structural components to pedagogical process components: teacher and student goals and objectives of scientific activity, content, research methods, forms of scientific activity organization, scientific research methods, means, control methods and means, and results. As a result, a comprehensive picture of higher education's pedagogical process emerges. By presenting the educational process in higher education institutions as the Student's Scientific Research Work, A. Minbayeva demonstrated how to achieve the scientific and pedagogical formation of prepared specialists. In her model, she was able to thoroughly confirm the concept that "one teaching process equals one research process."

Teachers have been and continue to be skilled researchers, according to Phil McRae and Jim Parsons (2021) in their essay "Teacher as a researcher." As a result of research, both individuals and groups grow (which is a process of gaining

information). Teachers bring their expertise into the classroom and foster a professional community by sharing the knowledge they have gained through study. McRae and Parsons believe that "good teachers are always good researchers." "A teacher who learns a question during an experiment and uses a systematic method to find the answer engages in a certain form of research," they write. Through systematic research, attentive teachers observe their students and understand the culture of the learning environment. A "Strong Teacher," according to the authors, is someone who analyzes students' individual needs or learning environments, considers their every move, and best meets the needs of the learner and the system. They observe that the teacher's/researcher's activity consists of recurring questions, observations, thoughts, and actions in new student groups in cycles. The authors assess the teacher's performance in light of the most recent educational approach. McRae and Parsons consider any teacher who investigates a new curriculum, evaluates teaching practices, values new ideas, is evidence-based, and re-evaluates daily teaching to be a creative researcher. As a result, they observe that research is not only a specialist's activity outside of the classroom but also a component of teacher activity. "A good teacher is a good researcher," the authors believe. "They would not be good teachers if that were not the case."

Thus, based on the findings of several studies on the fundamental characteristics of "scientific and pedagogical formation," scientists feel that the following are the primary characteristics of this stage:

- To investigate the internal dynamics of the teacher-learner-content interaction;
- Concentrating on two connected topics, such as individual social growth and professional development and specialization;
- Focused on intellectual and practical activities that involve systematic learning through observation and experimentation based on scientific accomplishments and best practices;
- Providing fresh content for teaching and learning activities, with the instructor acting as a researcher and the student acting as a scientific innovator;
- The future teacher-researcher is engaged in a dynamic process of self-analysis, self-development, and long-term transformation.
- Involvement of information technology in the educational process results in a learning environment that encourages and fosters critical thinking, creativity, cooperation, and problem solving;
- Preparing the future or current teacher to feel like a manager rather than an executor: supervises the learning process in the classroom, the quality of education, the interaction between participants, examines issues in any direction, finds the reasons, prepares and executes solutions.

These characteristics are assessed in terms of continuous pedagogical education content and technology. The following are the findings reached:

1) The "scientific and pedagogical formation" of a future teacher or existing pedagogical staff in a field of specialization enables one to study the internal dy-

namics of the relationship between the teacher, learner, and content and to find solutions to related issues between personal development and staff training.

2) The fact that the teacher is a researcher and the student is a scientific innovator emphasizes the new content of teaching and learning activities; the image of the research teacher emphasizes two areas of activity: the organization and evaluation of the teaching process as research; and it is claimed that research is the only way to achieve a high level of professionalism, as well as the necessary theoretical and practical knowledge and skills.

3) The use of information technology in the educational process provides numerous opportunities for the development of an educational environment that encourages and fosters critical thinking, creativity, collaboration, and problem-solving abilities.

4) Multidisciplinary activity: assures the construction of a manager as a teacher who oversees the learning process in the classroom, the quality of education, and the interaction between the participants in education, identifies the sources of issues, and methods to fix them.

5. The Scientific and Pedagogical Self-Improvement Stage

"Scientific and pedagogical self-improvement" is the fourth of five interconnected stages of the system of continuous pedagogical education and teacher training described in the "Concept and Strategy of Continuing Pedagogical Education and Teacher Training in the Republic of Azerbaijan." This stage is distinguished by the acquisition of new knowledge and the design of pedagogical activities based on that knowledge. It is also characterized by the development of skills for conceptualizing the process and implementing specific pedagogical technologies and methods. Although the basic features of self-improvement are presented here, the question arises: what is the most specific characteristic of "self-improvement," what issues should be guided in the development of pedagogical education content and technologies, and what should be considered in practice?

"Self-improvement" is defined by the 80. Oxford Advanced Learner's Dictionary as "the process by which a person improves their knowledge, status, character, etc. by their own efforts." Self-improvement is defined in the Cambridge Explanatory Dictionary as "the activity of learning new things on your own that make you a more skilled or able person." Merriam-Webster defines self-improvement as "the act or process of improving oneself by one's own actions." Some dictionaries list "self-improvement" as a synonym for "self-reorganization." After the second (self-organization) and third (scientific-pedagogical formation) stages, the "self-improvement" (self-reorganization) stage could be accepted as a reorganization and deeper organization of work to further improve the acquired knowledge, skills, and values.

Self-improvement, according to Ushakov's explanatory dictionar (Толковый словарь Ушакова), "development of one's own strengths, physical and mental, on the basis of amateur performance, independent studies". Human moral

strength, moral thinking, and purposeful activity are the only ways to improve oneself. "Self-improvement" refers not only to the ongoing education of educated or qualified specialists in any field but also to make every person's, every citizen's life happier, more successful, and more purposeful. It has been regarded as a valuable strategy for achieving perfection. In this regard, a variety of internet bloggers have provided valuable advice and sometimes guidance, from experienced people or professionals to ordinary citizens, on how to improve one's themselves. Here are some examples of such blogs:

1) Improving personal education and leadership skills, Banker. az., 02.12.2013;

2) Dr. Said Imtiyaz Ahmad, Principles of Self-Improvement in Islam, Vice President of the Canadian Islamic Society, Center for Religion and Democracy, 2011;

3) Kamal Jamalov, Advice of Nizami Ganjavi's son Mohammad on ways to acquire moral values, Sozcu. az, 04.03.2021.

4) Scott H. Young, What is Self-Improvement, (What is Self-Improvement?) Make it happen, December 2018,

5) Margaret Paul, PhD, What Does It Mean to Self-Improve? Best-selling author, seminar leader, and cocreator of Inner Bonding, 05.31.2016 Updated: June 1, 2017.

These public access pages approach the issue of self-improvement through religious-philosophical, economic, career development, and personal self-improvement lenses. Great thinkers such as Nizami Ganjavi (Jamalov, 2021), Nasreddin Tusi, and Shihabeddin Yahya Suhravar (Mammadov, 2016) have historically been featured in works about self-improvement.

In his book "Culturology, Culture, Civilization," prominent scientist Mammadov, 2016, guided by Tusi's (*Azerbaijani scientist, philosopher, astronomer, mathematician, historian, financier, theologian and lawyer, statesman* (1201-1274) concept of self-government and self-improvement, writes: "The greatest courage is the courage against oneself." He believes that "overcoming one's shortcomings and approaching wisdom" is possible. Man can rise to a higher level of culture if the soul is under the control of the mind and heart, but the spontaneous release of the soul can reduce man to the level of an animal (p. 191). The scientist also advises those pursuing self-improvement about the moral and psychological difficulties of this path and provides the necessary suggestions: Stressing the importance of "self-improvement", the scientist stated that "everyone should be able to look at themselves from the outside to increase development and opportunities" and "evaluate their strengths and weaknesses." Only people who go through these processes, according to the author, can open "new opportunities for self-assertion and realization of their abilities and capabilities in life, meeting the tastes and interests of the individual." Mammadov F. defines a person who has achieved self-improvement as "maximizing his professional potential," "maximizing the efficiency of his energy," and "reducing entropy inefficiently wasted energy to zero." All of this, according to the author, means "giving incredible results," "excellent motivation, self-improvement," and

"leading to new life victories" (p. 201).

Ahmadov I. (2012: p. 27) emphasizes the paradigm shift in modern pedagogical science. As a result, the paradigm of a "knowledgeable person" has been replaced by the paradigm of a "person ready for life" (capable of self-improvement). The change in the educational paradigm in this context is due to the dynamics of the world, rapid change, the role of information, and innovation in the development of the individual, society, and state. A significant shift in the educational paradigm necessitates changes in content and technology at all levels of continuing education.

In their textbook "Pedagogy," F. Ibrahimov and R. Huseynzadeh (2011) write, "It is necessary for learners to have enough creative activity, independent work, to learn in them, to apply knowledge in practice, to practice themselves creating a wide range of opportunities for the formation of skills and habits" (p. 115). Scientists' ideas on how to apply self-education and self-improvement through direct independent learning technologies are particularly useful in terms of contemporary demands for learning organizations at all levels and stages of education. Some examples demonstrate how to put the self-improvement issues discussed above into action. The "Professional Standards Self-Improvement" (2014) example was prepared by the Education and Training Foundation in the United Kingdom. This is a model for systematic self-improvement implementation in teacher education. Although this model is intended for use by practicing teachers, it can be applied at all levels and stages of pedagogical education. The model is divided into three parts: self-assessment, identification of long-term individual and professional development needs, and long-term individual development. The model's self-improvement person, teacher, and student must go through three critical stages: self-assessment, self-identification, and self-improvement planning. For each stage, detailed instructions and recommendations were provided, as well as suggested work schedules. Particular emphasis is placed on the implementation of self-improvement by approved professional standards. State-approved standards serve as the primary criterion for evaluating each student's and teachers' professional training. Gaps identified during self-assessment are assessed as the need for self-improvement in terms of these standards. Improvements are also in the works in this area. This model, which was based on perfect logic and practical capabilities, was thought to be significant in terms of the problem.

Thus, the study demonstrates that "self-improvement" is not only the fourth stage of pedagogical education's content and technology but also one of the most important concerns in terms of continuing education, self-education, and the creation of personality and citizenship in general. The researchers based their research on the following characteristics of "self-improvement" and "scientific-pedagogical self-improvement":

- To become a better person physically, mentally, and emotionally;
- Improving one's knowledge, position, or character via self-effort, self development, and self-education;

- To rethink himself; to rearrange his physical, intellectual, and emotional existence when life circumstances, interests, and needs change, to recognize areas in need of repair and improvement, and to rethink himself;
- Assessment of their degree of professionalism by state-approved standards, assessment of discovered gaps as a need for improvement, and development planning;
- A person's desire to develop into a personality by continually improving his knowledge, habits, abilities, will, responsibility, morality, and successful creative activity;
- Self-improvement "maximizes energy efficiency and decreases entropy, inefficient energy usage to zero".

These characteristics are assessed in terms of ongoing pedagogical education content and technology. The following are the findings reached:

1) "Scientific and pedagogical self-improvement" of pre-service or in-service teachers is accomplished by assessing their physical, intellectual, and emotional capabilities in response to changing living conditions, interests, and needs, to identify areas for correction or development, and to realize self-education and self-development.

2) Evaluating the existing state of professionalism in light of the requirements outlined in legal and normative legislation, as well as professional standards, assessing the detected gaps as "needs" ensures that development planning is effective.

3) Establishes conditions for the development of personality and professionalism via the continuous improvement of efficient creative activity.

6. Characteristics of the Stage of Self-Realization

"The fifth stage of the content and technology of continuous pedagogical education is self-realization." This stage is distinguished by the development of the teacher's ability to design and implement innovative educational activities.

Plato and Aristotle provide the classical definition of self-realization theories, demonstrating that a person's different happiness, a person's different prosperity, occurs only when he realizes himself. That is, a person is considered self-realized only if he has attained the highest level possible through his self-distinguishing activities.

The philosophical foundations of self-realization have been studied by several scholars (Rahnamaei, 1999; Ireyefoju, 2015). Rahnamae S. compared the views of J. Dewey and Allama Tabatabai in terms of self-realization in the philosophy of education. Ireyefoju P. studied the ways of building education for self-realization based on Plato's human psychology. According to S. Rahnamaei, self-realization is a central concept in educational philosophy. This is one of the most important attributes in almost any educational value hierarchy. The researcher investigated the concept of self-realization in two philosophical systems: secular and naturalizm humanism and religious and Islamic transcendentalizm. J. Dewey and Al-

lama Tabatabai, two notable persons who represent one of the aforementioned systems of thought and are sensitive to originality, have been studied to understand how they came to realize themselves in different cultures and under different circumstances.

Self-realization is the result of one's self-development and self-education. According to the "Encyclopedic Dictionary of the Educator", "self-realization" is an active life position to embody a person's potential in action and relationships. It is also a self-actualization activity in an existing or newly created environment. An individual's self-realization results from his potential being realized and a process. A person's level of self-realization determines his level of satisfaction with life, activity, spiritual, mental, and moral development (2002).

The main tasks of education, according to Aliyev B. and Jabbarov R. (2008), are self-realization of the personality. They claim that "it is difficult to achieve an effective organization of self-realization in education without studying the psychological nature of the educational process, its form and content, as well as the degree of its impact on the personality" (p. 1). Authors define education as a "sociocultural subsystem." In terms of the system approach's general methodological principles, there are two perspectives on "self-realization": 1) man's self-realization in a closed system (traditional scientific direction); and 2) human self-realization in an open system (synergetics-self-regulation, self-organization) (p. 143).

In regard to the educational element of self-realization, Baranova A. and Valeev A. (2016) point out that new ideals such as self-development, self-education, and self-realization now form the foundation of student-centered education. In this sense, the discovery and manifestation of intellectual talent in the context of diverse learning activities and communications are a difficult process for university students to build self-realization skills. As a result, it is critical for students to understand their goals and values for self-development in their future professional endeavors. The researches undertaken by Baranova and Valeyev, as well as the subsequent outcomes, are notable: humanization of the educational process (defining the main purpose of the university for the formation of personality in young people); axiological principle (support for the individual's existing values); development of student's social life and habits (creating the need for students to use culture as a means of communication and activities); creative thinking (intensifying opportunities for each student to be creative in high school); pedagogical support (to encourage students' self-development).

Usova S. (2002) discusses self-realization skills in the organization of pedagogical education in her dissertation, "Preparation for professional creative self-realization in future primary school teachers." According to the author, students in pedagogical educational institutions are both a passive object and a product of external factors. The researcher further underlines that learning established within this paradigm does not assist future teachers in improving self-determination and self-affirmation. Usova S. identified the stages, model, diagnostic methods, and pedagogical conditions to achieve the formation of

"self-realization," which was thought to be important in terms of the problem.

Ireyefoju (2015) defines Ukeje's notion of "education for self-realization" as "education aiming at the formation of an independent, self-reliant, free and responsible individual, citizen, capable of contributing to the development of morals and society." According to him, this approach provides a chance for "learner self-confidence and self-actualization." It should be characterized, according to the author, by the process of acquiring components of self-realization, critical analysis, experience, and discovery rather than by critical acceptance of inspiration, teaching, or the judgments of others (Ireyefoju, 2015).

Some scholars have proposed a model for teaching self-actualization. Pugacheva (2016), together with a large group of Russian university researchers, created a "Form for the Self-Realization of Research University Students in the Process of Civic Education". Authors emphasize that the development of self-realization preparedness may be seen as a measure of the educational process's quality (p. 128). The dialectical union of a person's desire to integrate into a social society, the preservation of individuality, and the desire to stand out as an individual within that community characterizes the process of self-realization. The process of civic education's content of self-realization preparation, according to the text, is based on the following: 1) inclusion of educational material related to civil society theory and practice in the educational content; 2) formation of the information-event-learning environment; and 3) development of teachers' methodological culture.

Seriozhnikova R.K., Nina Y. Shtreker, Lev G. Vasilyev (2018) developed a model of students' creative self-realization in an innovative professional and educational environment. The model was presented at the 4th International Forum of Teacher Education. It demonstrates the growing interaction content in four stages: 1) psychological-pedagogical (what influences?); 2) subject knowledge (with what?); 3) methodological environment (by what means?); and 4) synergetic (how to organize?). The authors emphasize the importance of a step-by-step, consistent, and purposeful approach to self-realization: "Over time, the content and realization of student self-realization is a chain of these relationships: personal interest and self-awareness; unique identification, primarily as a future teacher; self-determination in ambiguous pedagogical situations, self-design in the organization of professional-pedagogical educational activity; self-improvement; self-realization" (p. 416).

Numerous scientific papers are based on the following characteristics of "self-realization in terms of pedagogical innovation" and "self-realization" as a separate pedagogical-psychological process, which is the final stage of the organization of the content and technology of continuous pedagogical education:

- The realization of one's desires and aims in connection to one's talents, character, or personality;
- An active life position to embody a person's potential in action and relationships;

- The consequence or process of actualizing one's capabilities in an existing or newly formed environment;
- A person's self-realization in a closed system (any field of endeavor) and an open system (in life);
- Preservation of one's identity to integrate into and be recognized as an individual in one's social community;
- The individual's contribution to society's progress as an autonomous, self-assured, free, and responsible citizen;
- Active engagement with a feeling of interdependence, collaboration, and belonging;
- Rising one's competences in terms of "psychological-pedagogical" (what influences?), "moral", "subject-matters" (with what?), "value and ideology", "methodology" (by what means?), "synergistic" (how to organize?) to the level of "creative originality".

These characteristics are assessed in terms of ongoing pedagogical education content and technology. The following are the findings reached:

1) The "self-realization of the future teacher or existing pedagogical staff in terms of the propensity for pedagogical innovation" in the field of specialization enables him to take an active life position for the realization of his personality, potential opportunities, dreams, and professional development goals;

2) Demonstrates confidence in normal or unfamiliar circumstances and provides the environment for its potential to be achieved;

3) Demonstrates confidence in normal or unfamiliar circumstances and creates conditions for its potential to be achieved;

4) Promotes a sense of interdependence, collaboration, and belonging to contribute to the growth of society as an autonomous, confident, free, and responsible citizen while sustaining the individual's integration into the social community;

5) Ensures that one rises to the level of competency and creative originality in addressing all issues that must be handled, both as a professional educator and as a person and citizen in real life.

Thus, the characteristics that distinguish the stages of content and technology in pedagogical education have been defined using fundamental research and best practices. The five stages of pedagogical education content and technologies emphasized in normative documents (self-determination, self-organization, scientific-pedagogical formation, pedagogical self-improvement, and self-realization) were discovered to have great opportunities to be implemented within each level rather than between levels (bachelor, master, advanced training, and doctorate), and the approaches of selected scholars provide the basis for such a conclusion.

The investigation of the main characteristics of the five stages of content and technology in continuous pedagogical education has allowed us to regard its content and technology as a five-stage system in each level of pedagogical education. The model, intended to study in future research by these qualities, will have

five stages of content and technology.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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