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STRUCTURAL-FUNCTIONAL MODEL OF DEVELOPMENT OF PROBLEM SITUATION MODELING SKILLS IN STUDENTS OF GENERAL EDUCATION SCHOOLS

Khaydarov Khurshid Ismatovich
Independent Researcher Samarkand State Pedagogy Institute
e-mail: khurshidkhaydarov310@gmail.com

Abstract
This article examines the pedagogical mechanisms for developing the skills of anticipating, analyzing, and modeling problem situations that future specialists may encounter in their professional activities within the higher education system. The essence and structural components of the skill of modeling problem situations are revealed. As the main object of the study, a holistic structural-functional model aimed at the systematic development of this skill was developed and pedagogically substantiated through its components: target, content, technological, and resulting blocks. Additionally, the role and effectiveness criteria of problem-based and imitative learning technologies in shaping students' analytical, design, and creative thinking were determined.

Keywords: Problem situation, modeling, structural-functional model, professional competence, cognitive component, technological block, outcome criteria, pedagogical imitation, problem-based learning, creative thinking.

Introduction

Annotatsiya

Ushbu maqolada oliy ta’lim tizimida bo‘lajak mutaxassislarning kasbiy faoliyatida duch kelishi mumkin bo‘lgan muammoli vaziyatlarni oldindan ko‘ra bilish, ularni tahlil qilish va modellashtirish ko‘nikmalarini rivojlantirishning pedagogik mexanizmlari tadqiq etilgan. Maqolada muammoli vaziyatlarni modellashtirish ko‘nikmasining mohiyati va tarkibiy qismlari ochib berilgan. Tadqiqotning bosh obyekti sifatida mazkur ko‘nikmani tizimli rivojlantirishga qaratilgan yaxlit strukturaviy-funksional model ishlab chiqilgan va uning

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komponentlari (maqsadli, mazmunli, texnologik hamda natijaviy bloklari) pedagogik jihatdan asoslangan.

Kalit so‘zlar: muammoli vaziyat, modellashtirish, strukturaviy-funksional model, kasbiy kompetensiya, kognitiv komponent, texnologik blok, natijaviy mezonlar, pedagogik imitatsiya, muammoli ta’lim, kreativ fikrlash.

Today on the day world education in the place experts preparation quality increase, they have independent and critical thinking formation priority from tasks one is considered . High education fundamental reforms in the system graduates not only ready scientific-theoretical knowledge to master , but unexpected , uncertainty and A real professional life full of contradictions in the environment fast , optimal and innovative decisions acceptance can to take ability to develop requirement is doing . Professional activity nature this shows that every how working release , management or social process certain from problems empty not [1]. Consequently , students this to problems education in the process preparation idea is relevant . Problematic situations modeling skill future expert's complicated and controversial processes systematic analysis to do , its structural parts separation , logical , graphic or mathematician models create and this models using of the problem solutions forecast to do qualification This is a habit . in the student passive from listening asset creativity , reproductive from activity to productive activity to move provides .

However, traditional education methods most in cases to students ready solutions presented to reach directed be , real life and professional problems systematic modeling process complete cover Therefore , the higher education under the circumstances students problematic situations modeling skills development pedagogical system create and his/her structural-functional model justification this of the research relevance defines . Problematic education concept and his/her person in development role far annual scientific to the basics has . Pedagogy and psychology in sciences problematic situation and his/her thinking activator Kuchi J. Dewey , A.M. Matyushkin, MI Makhmutov, I.Ya. Like Lerner in the fundamental work of scientists research was made . A.M. Matyushkin problematic " subject " situation and object between each other of the relationship so intellectual in that case subject new knowledge or methods of action to master need "feels " he describes .

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Modeling method and his/her in education The importance of VA Shtoff , VV Davidov and other researchers by learned to be , their I think the model is complicated . object or of the process the most important features save remaining without it , it simplified and study for comfortable in the form reflection provider artificial system . Uzbekistan pedagogy in science too in the direction weighty affairs done increased . N.N. Azizkhodjayeva education to the process innovative technologies take entrance and future of the students professional skill increase problems research reached if so , R.A. Mavlonova education process systematic modeling to the issues attention Also , B.R.Adizov problematic of education didactic the basics learned [2]. Although in literature problematic education and modeling separately deep learned although , future in specialists professional " problematic " in character situations modeling " developing " skills holistic , systematic and supreme education to practice customized structural-functional model enough at the level whole system to the state not cited .

This of the research methodological basis systematic system approach , active activity approach and structural-functional modeling principles organization Systematic approach within problematic situations modeling his/ her skills develop process many from elements consists of was , certain to the hierarchy and internal to the dynamics has whole system as seeing was released . Research during following scientific and pedagogical methods from the complex used :

— **Theoretical methods :** To the topic related philosophical , psychological , pedagogical and methodical literature comparative analysis to do , to exist pedagogical models study and generalization .

— **Empirical methods :** High education institutions students and professors in the middle conducting surveys (questionnaires) , studying process directly and indirectly observation , students performing project and case studies expert assessment .

— **Modeling method :** Pedagogical of the process architectonics and functional their connections indicative structural blocks design [3].

Future in specialists problematic situations modeling his/ her skills successful develop for us education process all stages cover recipient structural-functional the model We designed a structural-functional model of education . system not only internal elements (structure), but also this of elements final to the goal achieve on the way also explain its functions gives [4].

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System elements four main block in the hierarchy merged . Below this blocks internal structure and functional tasks surrounding analysis will be done .

1. Purposeful block (Target Component). This is a block model foundation to be , to be to the composition social order , methodological approaches and final goal enters .

— **Social order :** Modern digital economy and working release in the environment unexpected problems fast " problem - solving " (problem - solving) solution to do) competence has to the personnel was need .

— **Methodological Basis :** Systematic, competency-based and to the person directed approaches .

— **Main goal :** In students professional problems analysis to systematize , to organize , to logical-functional models create and the optimal solution scenarios design skills effective development

2. Content block (Content Component). Meaningful block problematic situations modeling of the habit internal architecture We define this my skill three main microcognitive to the component we separated :

— **Cognitive (knowledge) component :** Student's problem nature , conflicts come exit reasons , modeling types (mathematical , logical , computer , situational) and information systematization rules about theoretical knowledge sum of .

— **Technological (operational) component :** Specific problem identification , second level factors aside push , push important elements separate to abstract , they between functional dependency graphic or schematic to look to bring , to model from the test transfer and practical skills application [5].

— **Motivational-personal component :** Problematic to situations relatively professional interest , unexpected in situations confused not staying (psychological sustainability), innovation solutions to search was internal aspiration and responsibility .

3. Technological block (Technological Component). Technological The block is the " heart " of modeling , and it is skill formation stages , methods and pedagogical conditions defines the process . step by step (algorithmic) done increased :

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4. Result-based criteria block (Evaluation Component). This block in students your skill formation level determination and whole head pedagogical monitoring the process to go function does . Skill development level three criterion according to is evaluated :

— **Low Level (Reproductive):** Student problematic situation the existence feeling does , but his/her cause and effect their connections independent analysis can Modeling only teacher gave ready template and instructions based on , mechanical in a way does . Creativity indicator very low .

— **Medium level (Productive-heuristic):** Student of the problem structural parts independent separate takes , standard situations for usual logical models successful builds . The problem one how many traditional solution options offer can takes , but risks forecast in doing a little limp is observed .

— **High Level (Creative-Innovative):** Student complicated , many factorial and high uncertainty to the level has problematic situations deep analysis can takes . To himself unique , original and flexible models (this including visual and create digital The problem is strategic consequences clear forecast does and innovative solutions based on gives .

5. Conclusion and recommendations (Conclusion **).** Obtained theoretical analysis and modeling results following conclusions to release opportunity gives:

1. Systematicity principle : Future in specialists problematic situations modeling skill develop spontaneous to the character has not to be This is necessary . process purposeful , meaningful , technological and consequential components mutual integral relatedness provider whole only on the basis of the structural-functional model gives high efficiency [6].

2. Pedagogical Transformation : Modeling into practice implementation to be education process subject-object from the relationship (from the teacher to the student ready knowledge transfer) subject-subject relationships (in collaboration) problems solution and modeling) transformation does .

3. Competency growth : Production model students not only in a narrow circle professional knowledge , but flexibility , systematic thinking , analysis to do and forecast such as important "soft skills " skills) complex shapes .

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