

PEDAGOGICAL CONDITIONS OF TEACHING “COMPUTER GRAPHICS AND VISUALIZATION ”

Otakulova Durдона Rahmovna

Navoi State Pedagogy Institute “Informatics” Department of the Teacher

Annotation

This in the article pedagogy higher education in institutions Teaching “Computer graphics and visualization”. Pedagogical conditions specified. Also , the computer graph programs using visual projects to prepare about offer and recommendations brought.

Basewords: computer graphics, visual project, pedagogy condition, information-education environment, Moodle, web technology.

Today's in the day digital technologies all in the fields wide on the scale application and computer devices improvement and to him suitable practical , institutional of programs work output because of information technologies according to personnel preparation system improvement problems appear is happening These problems from solutions one higher education in institutions informatics and information technologies sciences, including of the computer graphics programs and web technologies about sciences of teaching form , method and tools improvement through reach can _ Because computer graphics about sciences using digital images Create and again work opportunity is created . Also students of the computer graph programs using creative activity to do based on authorship products, including new image and ideas independent respectively to express for conditions creates. That is computer graphics digital photomontage from technologies one different of photographs fragments combined without image creates in this way created images imagination and individual creativity of the author ideas combines [1].

These are based on different different graph images such as drawings, sketches, advertisements, presentations, infographics, animations effects and videos, web resources for applications, virtual worlds, process and events modeling such as design opportunity is created. And this own in turn computer graphics sosini development necessity existence means.

Therefore, today in the day computer graphics about competent experts preparation system improvement current from problems one be remains. This problems solve for initially computer graphics about of sciences to teach and of students graph competence development pedagogical conditions clarification it is necessary of this for initially pedagogical a must concept and of sciences in education pedagogical conditions according to take went of scientists their work analysis to reach requirement is enough. There fore in our research U. M. Mirsanov [2], G.V.Sharopova [3], V.S.Tatyana [4], N.P.Rusinova [5], O.V.Galkina [6], N. Ippolitova [7] works was studied. Theirs in their work pedagogical a must concept according to differently interpretations there is

In particular, N. Ippolitova to his opinion according to pedagogic conditions pedagogical of the system structural from the parts one being, study environment of possibilities the total reflection is to continue [7]. N.P.Rusinova pedagogical conditions education of the process structural parts (subject and teaching) eng good mutually in effect present to the teacher efficient teaching and education to the process leadership to do enable giving , students while study process to manage possibility giving

environment as defines [5]. U. M. Mirsanov in his opinion, pedagogical conditions didactic to goals reach for content elements, methods and of teaching organizational forms purposeful choose, design and apply is the result [2]. of G. V. Sharopova academic, pedagogical the conditions are study of the process different stages and in general learning process of the result efficiency to achieve set giving pedagogical of activity based, organized done cases and directions is a set [3]. O. V. Galkina which considers pedagogical conditions as one of the components of the pedagogical system, which affects the personal and procedural aspects of this system, reflects the totality of educational and material-spatial environment opportunities that ensure its effective operation and development [6].

Based on the analytical data provided in this way, pedagogical conditions can be divided into three types: organizational-pedagogical, psychological-pedagogical and didactic. Organizational and pedagogical conditions when you say education problems solution to do possibility giver factors set is understood . Pedagogical-psychological conditions - education the giver education to the recipient of influence pedagogical measures providing education of the process efficiency to increase directed conditions. Didactic conditions education goals reach for of education content , methods and organizational forms purposeful is to choose [6].

Pedagogical of conditions each one known functions set with is described . For example, organizational and pedagogical of conditions main task pedagogical of the process procedural aspect is management. Pedagogical-psychological of conditions task person bring up and to develop directed sure pedagogical events organize is to reach Didactic conditions while education goals reach for of work content, methods and forms choose.

This conditions using students computer graphics and to visualization about independent things high level they do, professional in their activities necessary to skills have will be Implemented affairs as a result of students design and scientific research take to go about competence develops.

Therefore, it is recommended being carried out pedagogical conditions based on " Computer graphics and "visualization " science study efficiency in raising and of students graph programs using visual projects preparation competence develop the following six pedagogical conditions work we went out First pedagogical the condition is this a must of the computer graphics and web applications preparation programs, including CorelDr a w, Adobe Photoshop, HTML, CSS programs and WordPress To the platform about methodical of materials existence means This is it provided certain kind of graph and web pages design Create for projects done increase according to methodical from recommendations is used . Methodical recommendations to the graph about projects and web pages design Create for work exit according to instructions , it done increase all stages description , research transfer algorithm , results analysis reach and them present reach methods , recommendations , used books list of projects approximate topics own into take can " Computer graphics and " visualization " science teaching professor - teacher work outgoing to the graph about projects and web pages design Create problem according to addition electron to the literature have to be , students of them as methodological material their uses can Methodical of materials the presence of professors and students activities efficiency increases .

Second pedagogical prerequisite Information-education environments placed electron education from resources (video lectures , videos , hypermat data) is to use . In this students CorelDraw, Adobe Photoshop, HTML,CSS programs and WordPress Platform using prepared projects independent respectively electron education of resources using performs If the professor is a teacher traditional in

a sense of education defined content with students in the middle intermediary if so , information-education environments pedagogical of help separately shape provider tool being service does Information and education from environments using computer graphics and web applications preparation learn main structural part of students education in the space itself to educate and knowledge to get directs. Information and education environments main concept pedagogical is help. Pedagogical help means if the students graph programs using different advertisements , animation effects , visual projects , web applications in preparation to problems face if it comes , to them Methodical help for conditions Create process is understood .

Third pedagogical a prerequisite is a professor - teacher and students in the middle good developed consultation is a system. The computer CorelDraw, Adobe Photoshop , HTML , CSS programs and WordPress Platform using long term visual projects, animation effects , web environments work on the way out students themselves solution do it can't get to problems face coming can They are organizational to the part or directly graph project work outgoing to the topic belongs to to be can Such in cases , the project of the product to quality effect not do for surface came problems and questions solution to do help professor- teacher who gives with requires connection. That's why for students by long term visual projects Professor in performance education portals using online control it is necessary has been recommendations giving to go need.

Professor-teacher students with online communication in doing and recommendations giving on the go education LMS (Learning Management System) management system composition from the calculated Moodle platform use efficient is considered [8].

Moodle all users for open and free of charge was software product as work developed Desired user Moodle training in the environment (additions or called plugins) different study tools placing and online information exchange opportunity available [8]. With that together with the Moodle platform professor - teacher and students between mutually relationships organize to do directed education manage system [9]. Platform using remote education organize in reaching muhi environment be service does From Moodle use of students uneven study activity effect softening for alternative information source being service does [10].

The Moodle platform using computer graphics about sciences study efficiency in raising and of students independent education organize in reaching important importance occupation is enough This on the platform " Computer graphics and visualization " science study course when designing the following elements from the collection your use possible : dictionary , assignment , test, forum, resources group project .

So from the Moodle platform use of students independent their work organize reach opportunities increase point of view in terms of education different forms supported without from the system use point of view in terms of study of the process opportunities expands [8]. From this except for consultations control functions perform it is possible for the professor- teacher of the project readiness level observation and each one student himself how manifestation to do and graphics project in the activity How participation that it will observation enable gives.

The fourth pedagogical condition is this to graphics about research project topic independent choose and formation is a possibility. Subject not only object of study within to be , his tasks suitable coming , maybe graph project author (student's itself) for interesting and understandable to be need of this process efficient to be for sure Created to the algorithm have to be must , to him compliance did without

student given of the algorithm all stages perform and the subject independent formation possible will be That's why for students computer to the graph about project topic independent formation for Y.Sh.Alina and By the V.S.Tatyanas [4]. work developed the following from the algorithm to use offer (Fig . 1.1).

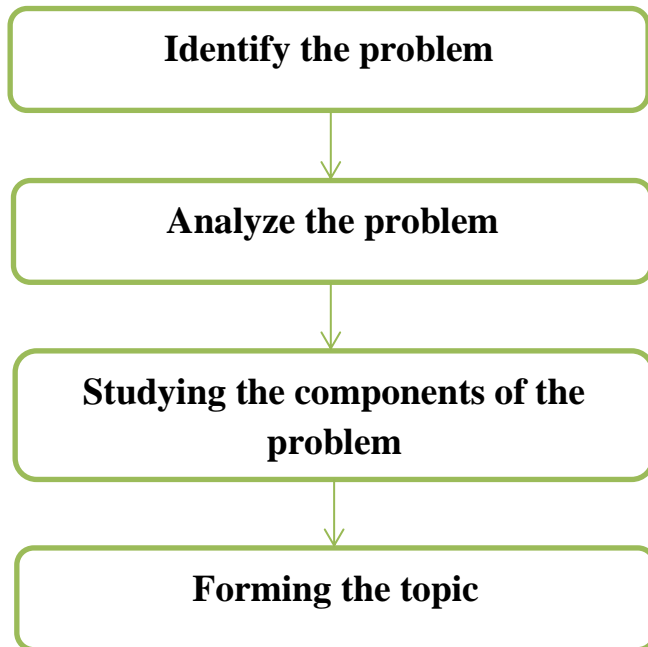


Figure 1.1. The computer garfik programs using visual projects preparation algorithm

Recommendation being carried out in the algorithm the first step computer graphics about problematic situation determination and him analysis is to do The situation analysis in doing the following aspects attention is obtained: certain scientific sciences with dependent important elements and factors is determined. Then look known has been which does not require learning components and in more detail to be studied need has been of the problem structural parts is separated. From this then, to the requirements according to the graph project the problem reflection bringer topic is formed. To the topic putable common requirements of the following consists of to be necessary: brevity, meaningful, scientific.

This algorithm based on of the computer CorelDraw, Adobe Photoshop, HTML , CSS programs and WordPress Platform using simple and complex visual projects work on the way out application can To these students own interests and from desires come out , course work and graduation qualified work more development for service to do possible has been the material choose and analysis to do enable gives.

The fifth pedagogical a prerequisite is a computer graph programs study efficiency increase and of students independent their work efficient organize of reaching next pedagogical condition students research to the activity attraction is to do Research activity set educational , scientific , methodical and organizational in character activity , all students study process within and from him outside selected specialty according to scientific research skills from teaching consists of is considered Research activity in the process students information with independent work , research abilities and skills done increase In this students conference, Olympiad, various in contests participating and creative potential develops

and independent thought conduct, own point of view look to prove learns Students computer graphics and web technologies according to scientific at events participation reach through independent thought management, creative independence and own his opinion protection to do such as communicative to competencies have will be Research activity project work group or in individual form to be it is possible design and research qualification to form help gives _

Sixth pedagogical condition is this the team be practical assignments and graphics projects to perform mean holds Project in the activity successful participation reach criteria one this communication to do and in the team work is the ability. That's why for the team as well be of the computer graph programs using practical assignments to perform pedagogical from the conditions one as higher education institutions of students design and research competence in formation important important have Group the project work exit and in the team work through students communication to do ability develop cooperation to do and of each other his opinion to listen they learn Project from the activity used without of students independent their work organize of reaching pedagogical conditions system see out of this we conditions design and research competence to form help will give said to the conclusion we came

So doing research within recommendation being carried out pedagogical conditions based on "Computer graphics and visualization " training efficiency to increase and future mathematics and informatics science teachers of the computer graph programs with efficient to work and graph programs using visual projects to prepare about competence to develop is achieved .

Books

1. Berezina Ya.Yu., Smolina L.V. Psihologo- pedagogicheskie osobennosti distancennogo obucheniya computer graphics // Sovremennye obrazovatelnye tehnologii v mirovom uchebno-vospitatelnom prostranstve: Sbornik materialov VIII International scientific-practical conference. Novosibirsk: Izdatelstvo TsRNS, 2016. S. 24-28.
2. Mirsanov U. M. Improvement of the teaching methodology of programming technologies in the continuing education system // Prepared for the degree of Doctor of Pedagogical Sciences dissertation. - Navoi , 2023 . - 332 b .
3. Shapapova G. V. _ Improvement of the method of using electronic educational equipment to increase the effectiveness of teaching immunology (pedagogical higher education muaccalapi micoli) // Doctoral thesis on pedagogical science (PhD) trained to receive a scientific degree dicceptation . - Tashkent , 2022 . - 159 p.
4. Alina Yu.Sh., Tatyana V.S. Pedagogical conditions for the use of project activities for the formation of project-issledovatelskih competences for teaching and learning // <https://core.ac.uk/download/pdf/197461639.pdf>
5. Rusinova N.P. Formirovanie u studentov pedagogicheskogo vuza komentetsii po organizatsii proektnoy deyatel'nosti obuchayushchihsiya // Avtoreferat dissertatsii na soiskanie uchenoy stepeni kandida pedagogicheskikh nauk Ulan-Ude - 2020. - 24 c .
6. Galkina O.V. The role and place concept of " organizational -pedagogical conditions" and terminological apparatus of pedagogical science .
7. Ippolitova N. Analiz ponyatiya "pedagogicheckie ucloviya": cushchno, klacifikatsiya / N. Ippolitova, N. Ctepxova // General and Professional Education.– 2012.– No. 1.– P.8–14.

8. Pisarev A.V. Vozmojnosti obrazovatelnoy platform MOODLE and training in information technology // Vestnik VolGU . Series 6. Vyp . 13. 2011–2012. - C. _ 70-73.
9. Distance learning system Moodle . - Electronic . from – Mode available: [http: //moodle.org/](http://moodle.org/)
10. Fedyainova , N. V. Opyt razrabotki kursa povysheniya qualificatsii "Organization of project activities in primary school with ICT use" in distance learning system " Moodle " / N. V. Fedyainova , I. S. Hiryanova ; Omsk Gos. ped. flour - Electronic. from the text. – The regime is accessible: [http://ido.tsu.ru/other_res / pdf /1\(33\)_2009\(21-28\). pdf](http://ido.tsu.ru/other_res/pdf/1(33)_2009(21-28).pdf).