



Pedagogical Conditions For Developing Information And Communicative Competence Of Future Engineers In The Process Of Independent Education

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ABSTRACT

This in the article independent education in the process future engineers informational and communicative competence development pedagogical conditions analysis Modern digital education in the environment students independent knowledge to take activity organization to grow important pedagogical from tasks one is considered . In the study informational and communicative competence content , its structural components and independent education in the process this competence to develop impact provider pedagogical factors studied . Also , independent education process organization in the process of digital technologies , electronics education resources and innovative pedagogical from methods of use efficiency based on given . Research results engineering in education independent education efficiency increase and students information with work competencies to develop service does .

Keywords:

Independent education, information and communication competence, engineering education, digital education environment, pedagogical conditions, innovative pedagogical technologies, competency approach, electronic education resources

Today on the day supreme education in the system done increasing reforms students independent education activity to develop separately attention to focus demand [1]. Especially in engineering in education students not only theoretical knowledge to assimilate , perhaps information from technologies effective use , independent accordingly information search for it analysis to do and practical in activity application skills also has to be necessary .

This because of independent education in the process future engineers informational and communicative competence develop important pedagogical from tasks one is [2]. Independent education students knowledge to take in the process active participation to reach provides and their independent thinking and problems solution to grow ability develops .

Information and communication competence person's information search , repeat

performance , analysis to do and from it effective use ability represents . This competence modern expert for necessary was important professional quality is considered . Information and communication competence following from components consists of :

1. **Information competence** – information search , sort and from it use skills.
2. **Technological competence** - information from technologies use ability .
3. **Communicative competence** – information effective transmission and communication to do ability .
4. **Analytical competence** – information analysis to do and problems solution in the process of application ability .

Engineering in education this competencies students professional to activity readiness provides .

Independent education students knowledge to take in the process active participation to reach provides. Independent education in the process students [3]:

- independent accordingly information seeks ;
- various from sources taken information analysis does ;
- own knowledge practical in activity uses .

Engineering in education independent education following in forms done increased :

- abstract and scientific affairs preparation ;
- project works ;
- electronic education on platforms assignments to do ;
- virtual laboratory training ;
- independent research works .

This activities students information with work skills develops .

Future engineers informational and communicative competence develop for following pedagogical the conditions create necessary [4].

1. Digital education environment formation .

Education in the process electronic education resources , online platforms and virtual laboratories use students for wide opportunities creates .

2. Innovative pedagogical from methods use

. Project based on teaching , problematic education , interactive methods students independent thinking and information analysis to do skills develops .

3. Students independent activity organization Independent

assignments , research works and project activity through students independent accordingly knowledge to take learns .

4. Information from technologies effective use

. Computer programs , internet resources , electronic libraries students information with work opportunities expands .

5. Teacher's methodical leadership

. Independent education in the process teacher students guide and advice giver role will do .

Modern education in the process independent education organization in the process of

following innovative from approaches use effective is :

- blended learning (mixed) education) ;
- remote education technologies ;
- online education platforms ;
- multimedia technologies ;
- virtual laboratories [5] .

This approaches students independent education in the process information with work skills to develop help gives .

Independent education in the process future engineers informational and communicative competence develop modern education system important from the duties This is one of them . the process effective organization to grow for digital education environment , innovative pedagogical technologies and competency-based approach important importance has [6].

Research results this shows that independent education in the process students information with work skills develop through their professional competencies formation possible .

References

1. Hamidov JA, Murodova AY (2023) Technology for development of professional and technical component of future engineers through virtual educational technology Atamuratov RK The educational advantages of virtual reality technologies. The Competing Science and Technology International Journal, 4 May 2023, pp. 87-90.
2. Murodova AY (2023) Virtualization in the training of engineers as a factor of increasing scientific efficiency. Academic Research Journal 2023. Pages 184-189 .
3. Urolova ZE Future engineers informational and communicative competencies in development of digital education environment efficiency. Samarkand state pedagogy Institute of Science and education "scientific integration" Journal 2026-4(1) 245-249
4. Urolova ZE Pedagogical conditions for the development of information and communicative competence of future engineers in the process of independent education . Science and technologies Journal 2026. No. 1(1) 126-135

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5. Uroкова ZE Future engineers information communicative competence development technologies. "Robotics and radio electronics in the field Innovations and technologies" international scientific and practical conference Jizzakh Polytechnic Institute May 5-6, 2025 VOLUME-2 pages 586-589.
 6. Usanov MM, Uroкова ZE Electronic education environment in formation cloudy from technologies use. " High" education digitization in the environment innovative technologies: problem and Solutions-2024" International scientific and practical conference (Uzbekistan) Republic of Jizzakh city, March 14-15, 2024) pages 85-88.