

# Improving the quality of education at the municipal level to prepare for a new technological order

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**Abstract.** Preconditions of this work are stipulated by necessity to provide interrelations of forecasted targets of education and targets of development of state and society. Research is aimed at revealing features of target setting of participants in the relations in the sphere of education during preparation for new technological order. Analysis of publications devoted to the considered problem was conducted. The participants in the relations in the sphere of education were surveyed. The main results are the essence and definition of concepts of education targets and their specificity during preparation for new technological order by the participants in the relations in the sphere of education. It has been determined that all participants in the relations in the sphere of education more distinctly understand the education target in comparison with comprehension of necessity to arrange teaching in accordance with the NTI program. Herewith, the most concerned in development of education of students in NTI technologies are pedagogical staff of comprehensive educational establishments, university administration, and governmental authorities of Udmurtia. All participants in the relations in the sphere of education have higher orientation at knowledge acquisition by students in comparison with orientation at formation of personal properties (except for parents and local authorities). Consistency of targets of all participants will allow to more efficiently train students for new technological order.

**Keywords:** target setting, participants in the relations in the sphere of education, NTI technologies, methods.

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## 1 Introduction

In order to estimate the education quality, the education target should be specified. Correctly formulated target has determining importance in arrangement of successful activity. According to K. Marx, target as a law determines the method and pattern of actions by a human [1]. This statement is especially valid for education system, since uniquely understood and achievable target should provide conceptual, staffing, and procedural integration at all levels of education system.

In the context of this research, necessity arises to reveal conditions of consistency of pedagogical target and modern trends of development. Since one of the key points for forecasting future is the national technological initiative (NTI), then, respectively, it is required to prepare students for creation and use of NTI technologies.

Since a target is the image of the desired result, it should be understood what will the student be like, ready and able to adapt and to develop during preparation for new technological order [2].

Assuming that one of the key points to forecast future is the national technological initiative (NTI), then, the issue becomes obvious: How to prepare students for creation and use of NTI technologies?

NTI is a global task of nationwide scale. Its implementation is the basis of success of the state in the high-tech environment. These are nano-, bio-, information technologies and digitization as their symbiosis. During the sixth technological order, the prevailing ones are information technologies, artificial intelligence, innovative materials, gene engineering, and their integration. The key element is staff allowing to develop these fields of economy. Taking into account migration of minds, it is required either to create conditions attracting staff into Russia or to prepare purposefully national staff. The first route is problematic, the second one is more realistic [3].

The existing studies in the field of continuous education are generally aimed at description of coordination of actions of participants in the relations in the sphere of education [4-6]. Taking into account the scale and significance of NTI, the significance of potential employers in the sphere of NTI, it is necessary to provide consistency of actions by participants in the relations in the sphere of education. The selection of urban level of the work is stipulated by the fact that all comprehensive educational establishments have founders of the municipal level.

Research hypothesis is as follows: improvement of education during preparation for new technological order is possible in the case of:

- determination of education targets and training targets oriented at NTI,
- arrangement of pedagogical conditions promoting subjective comprehension of necessity to acquire knowledge and to develop personal properties.

Research is aimed at revealing features of target setting by participants in the relations in the sphere of education during preparation for new technological order.

Tasks are as follows:

1. To reveal the concepts of education targets and training targets oriented at NTI by participants in the relations in the sphere of education.

2. To determine the level of understanding by participants in the relations in the sphere of education the necessity to acquire competences oriented at NTI.

## 2 Methods

In order to solve the formulated problem, the following research methods were used: theoretical (analysis of psychological, pedagogical, methodological works devoted to the considered problem); empirical (pedagogical monitoring, surveying, self-assessment).

### 3 Results

Aiming at understanding of NTI targets by participants in the relations in the sphere of education, the authors developed questionnaires and performed surveying in March–April, 2020.

More than 975 respondents participated in the survey: representatives of activities oriented at NTI of Izhevsk.

**Table 1.** Quantitative composition of respondents.

| Participants in the relations in the sphere of education     | Number (persons.) |
|--|-------------------|
| Students   | 166               |
| Pedagogical staff of comprehensive educational establishment | 191               |
| Academic staff of universities                               | 24                |
| Parents  | 222               |
| School administration  | 56                |
| University administration                                    | 84                |
| Governmental authorities of Udmurtia                         | 97                |
| Local authorities of Udmurtia                                | 87                |
| Employers  | 48                |

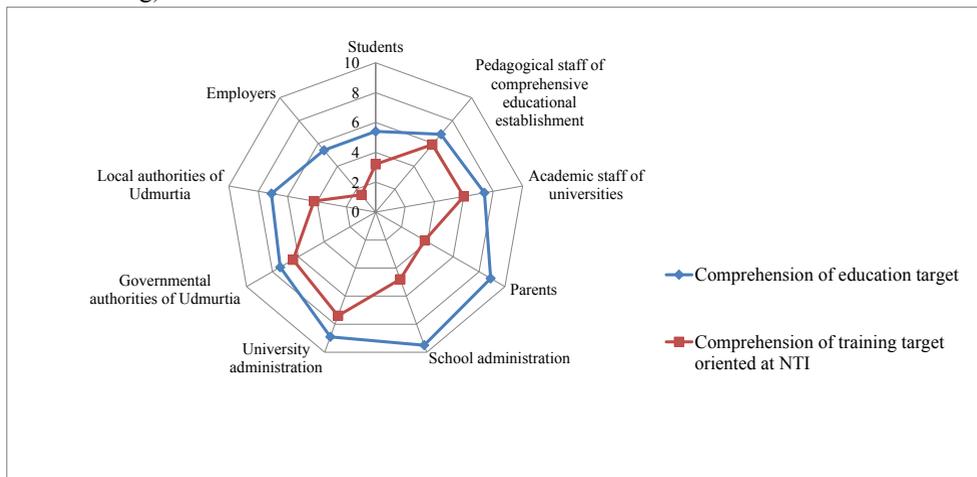
The researchers formulated the following tasks:

- to evaluate understanding of education target of participants in the relations in the sphere of education,
- to determine understanding of training targets oriented at NTI,
- to consider understating of actions aimed at target achievement (acquisition of knowledge and formation of personal properties).

Figure 1 presents the responses to questions 3 and 4 of the questionnaire:

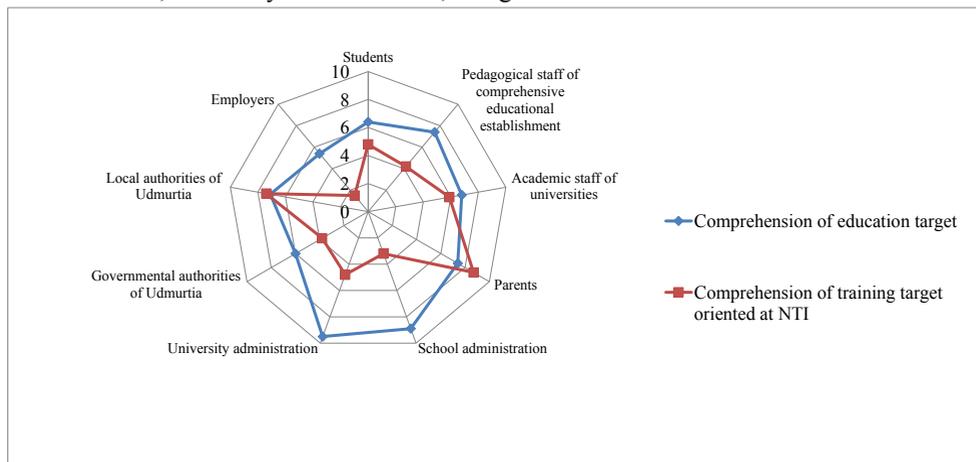
Question 1: Determine in points from 0 to 10 your level of understanding of education target (0 is the lowest index of understanding, 10 is the highest level of understanding).

Question 2: Determine in points from 0 to 10 your level of understanding of training target oriented at NTI? (0 is the lowest index of understanding, 10 is the highest level of understanding).



**Fig. 1.** Survey of participants in education sphere of Izhevsk in terms of their comprehension of education targets in NTI.

It can be seen that all participants in educational relations more distinctly understand the education target in comparison with comprehension of necessity to arrange teaching in accordance with the NTI program. The most concerned in development of education of students in NTI technologies are pedagogical staff of comprehensive educational establishments, university administration, and governmental authorities of Udmurtia.



**Fig. 2.** Survey of participants in education sphere of Izhevsk in terms of their subjective comprehension of necessity to acquire knowledge and to develop personality properties.

Figure 2 presents the responses to questions 3 and 4 of the questionnaire:

Question 3: Determine in points from 0 to 10 your level of understanding of knowledge acquisition (0 is the lowest index of understanding, 10 is the highest level of understanding).

Question 4: Determine in points from 0 to 10 your level of understanding of development of personal properties (0 is the lowest index of understanding, 10 is the highest level of understanding).

The survey results demonstrate that all participants in the relations in the sphere of education have higher orientation at knowledge acquisition by students than at formation of personal properties (except for parents and local authorities).

## 4 Discussion

Therefore, achievement of the required result – personality formation of NTI graduate – should account for external conditions: social and economic and technological situation of development of the existing society, as well as internal conditions: readiness, understanding, and motivation of participants in the relations in the sphere of education to follow the new trends of development of society and economy.

The education system should be oriented at long-term targets of formation of NTI graduate not declaratively but consecutively and consistently. Subdivision of the long-term target – personality formation of NTI graduate – into stages, would allow parents and students to act more directionally while achieving target. It is necessary to assist student in more active learning of NTI technologies and their future development. Therefore, the career of a future graduate could be arranged more efficiently.

## 5 Conclusion

This work has attempted to reveal the concepts of education targets and their specificity during preparation for new technological order by the participants in the relations in the sphere of education.

The authors have determined that all participants in the relations in the sphere of education more distinctly understand the education target in comparison with comprehension of necessity to arrange teaching in accordance with the NTI program. The most concerned in development of education of students in NTI technologies are pedagogical staff of comprehensive educational establishments, university administration, and governmental authorities of Udmurtia. All participants in the relations in the sphere of education have higher orientation at knowledge acquisition by students in comparison with orientation at formation of personal properties (except for parents and local authorities). It has been revealed that the respondents have no clear concept of NTI technologies and what objectives should be achieved by this program. Therefore, participants in the relations in the education sphere should be educated regarding NTI technologies and new professions.

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