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# Reflection Influence on the Thought Process of Students with Distance Learning

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**Abstract.** The issues of reflection and its relevance as a tool in the student education system for rethinking their activities and changing the direction of the students' thought process, prerequisites and advantages of using reflection in the education system and its influence on the students' thought process are given. The final result (product) of education (knowledge, skills, abilities, personal qualities) is created jointly by the teacher and the student, since the basis for the successful learning of the material is cooperation between them and a conclusion made by the student independently or with the teacher's help. In the course of the learning process, there increases the information flow for educational purposes (the World Wide Web, databases and electronic libraries, forums, conferences, computer models, indicators and simulators, network applications that facilitate organization of «virtual» collaboration, etc.). A description of the «portfolio» technology is given, that plays an important role in organizing the educational process and establishing connections between the teacher and the student and is the most important assessment tool. In the course of studying, reflection was considered as a phenomenon in the student's mind that arose after rethinking his activities and changing the direction of the thought process.

**Keywords:** reflection, education, educational process, distance learning, self-analysis, experiment.

### Introduction

In the regulatory document «On Education» [3], one of the important points is forming the necessary

conditions for obtaining quality education aimed at the formation, development and professional development of the individual on the basis of national and

universal values, achievements of science and practice, as well as the development of creative, spiritual and physical capabilities of the individual, the formation of strong foundations of morality and a healthy lifestyle, enrichment of the intellect by forming the conditions for the development of individuality.

Reflection in the learning process refers to the information of the state of the controlled object, the student at each specific moment of its activity. Reflection is, first of all, a characteristic of the student's state (readiness for classes, mood, attentiveness, his answers to questions, psycho-physiological state, etc.), on the basis of which the teacher selects management tactics, reacting flexibly to changes in the student's state. Implementation of reflection in the learning process can be considered in two aspects: content and emotional ones. The first type of reflection allows obtaining the information of the degree of the material assimilation being explained. In emotional terms, reflection is perceived by the teacher through the general emotional atmosphere of the class: the external behavior of students, their eyes, facial expressions, enthusiasm, interest, etc. The interaction of the content and emotional sides creates the effect of reflection and provides the information to the teacher of the level of the material perception and the cognitive value of the class [1].

### Research methods

When developing a quality management system at a university, it is first of all necessary to determine the «outputs» of the main processes. Let's focus on the distance learning technologies. In a narrow sense, the result of the education received can be considered the acquired knowledge, abilities, skills and competencies. However, they cannot be presented separately from the professionally significant personal qualities of a graduate. The main consumer of the final products of universities is the state that needs highly qualified specialists and intellectuals with a certain civic position. So, the quality product of an education institution is not an educational service but a graduate with his own professional competencies and personal qualities. The educational process should be aimed at developing these qualities in each graduate: its content, teaching methods, forms of organization, methods of monitoring and assessing students' knowledge, as well as forms of educational work and socializing activities.

In the educational process as a system, there is a natural and purposeful change in the qualitative state of its components and, above all, the teachers and students. At the same time, measuring, accounting and rational use of these changes in distance learning is a very complex and difficult task [3].

The term «reflection» means turning the student's attention to himself, to his consciousness, to his activities and the products of his own activity, as well as their rethinking. The term «reflection» is used in many sciences, such as philosophy, psychology, ethics, and pedagogy. Without setting the task

of analyzing various interpretations of the concept of «reflection», let's consider the meaning of this phenomenon in the pedagogical sense.

This definition represents the student's self-assessment and self-analysis, with the help of which he determines the scope of his knowledge, his capabilities and prospects for expanding them.

Thus, in the learning process, reflection acts as a certain mechanism that forms the student's consciousness, ensures self-determination and is the basis for the student's fulfillment of assigned tasks during the educational process. Reflection is the basis of the student's independent activity, and it is known that independent activity is carried out through interaction between the subjects of the educational process. This is a very important process in distance learning, since the student is outside the group, he is alone, he completes independently all the tasks.

To be more precise, the interaction of the teacher and the student, supposes the formation of the student's independent activity with himself, namely in the process of self-learning, while he uses technical means: computer equipment, specialized programs, etc.

It is known that the educational process is of the verbal and activity nature based on communicative and practical interaction. Communicative interaction is ensured by establishing mutual understanding between the teacher and the student: this is interpersonal (communicative) reflection. Practical interaction is realized through independent cognitive activity, when the student masters the content of the discipline. However, this knowledge will be effective only if it is meaningful, conscious, namely, it is implemented through intellectual (cognitive) reflection.

In the process of research, the authors developed an elective course for the bachelor's level «Ensuring the quality of the educational process», certain elements of which were used in practical classes.

The experiment on applying the reflection method to students was carried out in three stages.

*The first stage* of the experiment included:

- defining the goals and objectives of the course;
- developing a syllabus, a course of lectures, that is, all the required elements of the elective course;
- selecting experimental and control groups;
- conducting incoming control among students on the issues of organizing and ensuring the quality of the educational process.

*The second stage* of the experiment includes solving the above-mentioned problems of the elective course. According to the content of the elective course, the syllabus is divided into topics for 2 credits, which amounts to 15 lectures and 15 practical classes. Since the main objective of the elective course is to teach students to relate consciously and constructively to their ongoing (educational) and upcoming professional activities, for this purpose the method of cognitive reflection was used at the end of each practical class.

In the course of the experiment, the main task of

the teacher is to develop students' abilities for cognitive needs in the educational process, awareness of their role in the acquisition of professional skills and competencies, analysis and comprehension of the educational process meaning.

During the experiment, there was determined the level of collective, communicative reflection, and then the level of personal reflection of each student. Determining these levels is necessary for constructing the educational process and selecting the direction for the development of reflection. There was selected cognitive, personal reflection since considering each student as an individual is more effective.

It is important that the relationship between students and teachers be built on mutual trust and open dialogue to create a positive atmosphere that ensures the successful development of reflection. It is the trust between the subjects of the educational process that makes it possible to apply in full the method of reflection to develop self-awareness skills in students. The relationship between the teacher and the student built on trust becomes a stronghold for the success of implementing the reflection method.

To develop successfully the reflection function, the author used the «portfolio» technology that plays an important role in organizing the educational process, establishing connections between teacher and student, and is also the most important assessment tool.

The «portfolio» technology in this research provides implementing the following functions:

- goal setting (sets goals and allows them being achieved);
- diagnostic (allows determining the dynamics of changes in indicators and achievements of students);
- developmental (implemented through the continuous process of developing skills, knowledge and abilities of students);
- motivational (ensures students are encouraged to achieve their goals and improve results);
- corrective (allows making adjustments to the process of self-assessment and self-analysis of the student in the process of developing the reflection function).

During the experiment, two main types were used: a portfolio of achievements and a portfolio of self-assessment. Thus, before starting the elective course, each teacher filled out a portfolio that included the following:

- the input data of the student (full name, specialty, course of study);
- the information of the selected specialty (it served as the main factor in choosing a university and specialty, characteristics of the student's specialty, whether the student plans to work in this direction, etc.);
- the information of what the student wants to receive from the proposed elective course;
- the information of the student's achievements in the field of mastering the specialty being studied;
- the information of the students' self-assessment

in mastering the content of the educational program.

The portfolio technology allows developing not only the ability to collect, to analyze, to structure and to present the information but also reaching a new level of intellectual development of metacognitive skills.

In the process of mastering the elective course, students constantly adjusted their portfolio, and the obligatory condition was to retain the previous materials. At the end of studying the elective course, in class, each student analyzed his portfolio, how much his goal setting and mastery of the specialty had changed, and the student's self-assessment was also performed by studying the content of his own portfolio. It is worth noting that the students were very amazed by the result obtained, which allowed considering the experiment as successful.

At the end of studying the elective course in experimental groups of 3 universities, a survey was conducted regarding the benefits of portfolios for students; the majority of them said that this technology allowed them reassessing the information that was collected at the beginning of the experiment.

The results of the analysis of the educational process in the research databases has shown that today it is not enough for students to just attend lectures, to take notes on the information provided and, on the basis of this, to pass midterm and final tests. The basis for future success in the profession is a constant interest in the future profession, in studying the material and in realizing the need to obtain high-quality knowledge. The information obtained during training should be projected onto students' future professional activities, and they should be aware of the importance of the knowledge gained, which provides motivation for developing the competencies of a future specialist. With distance learning, the educational process can also be successfully complemented by work activity; online learning makes it possible to be more independent.

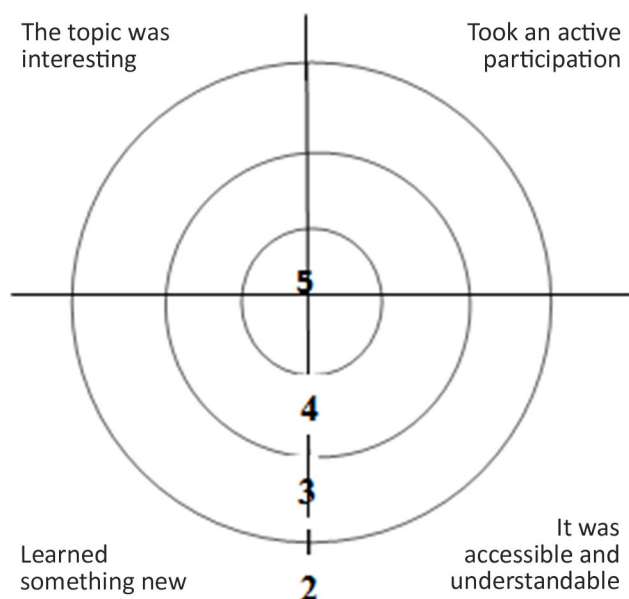
In the course of experiment, several types of training were used, including distance learning technologies, which ensured the formation and development of reflexive abilities. Methods of lecturing in control and experimental groups were analyzed. So, when the lectures were given using interactive tasks with visual aids, the students' thinking ability developed more than just in a lecture on the same topic. For example, in the course on the topic «Resource support for the educational process», the opinion was expressed that, in principle, the presence or absence of resources does not affect the quality of education, there is a teacher and a student, that's enough. In class in the experimental group, active students immediately received opinions to refute this judgment. The teacher tried to involve all the students, making them interested in this issue.

The next method used is the contractive conversation method that ensures the launch of reflection. In class, the teacher questions certain information, the concept or program in the subject area being studied

but he does not provide the correct answer, thereby involving students in the space of reflection.

During the experiment, there was analyzed the interaction between the teacher and students, so at the end of some classes, for example, in the types of resource support for the educational process, the reflective target method was used. A target is depicted on a sheet of A3 paper (Figure) that is conventionally divided into four sectors. Each sector has its name: the 1<sup>st</sup> one: the topic is interesting, the 2<sup>nd</sup> one: took an active part, the 3<sup>rd</sup> one: learned something new, the 4<sup>th</sup> one: it was accessible and understandable. Moreover, each sector reveals a certain meaning. So the 1<sup>st</sup> sector determined how the student assessed the content of the topic, the 2<sup>nd</sup> one meant an assessment of the interaction of participants in the educational process, the 3<sup>rd</sup> sector was intended to determine whether the student learned something new during the learning process, thereby assessing the activities of the teacher and 4<sup>th</sup> sector indicated the student's self-assessment.

Each student used a marker to mark in each sector the level of implementation, in his opinion, of the process; after the entire group had made marks, this target was put on public display in the classroom. The results in the experimental groups showed on average the following: 82% rated the topic of the classes as 5, 12% as 4, the remaining 6% considered the topic interesting as 3 points. In the sector «took an active part», 58 students took part with a score of 5, 64% took part with a score of 4 points. 14% of students rated it 3 points. For the sector, it was accessible and understandable by 5 points for 87%, the accessibility of the information presented was rated 4 points by 63%, and rated 3 points by 8% of students. In the «learned something new» sector, 94% indicated 5 points and 7% of students rated it 4 points. This entire process was also successfully implemented in online platforms, such as Zoom, Kahoot, etc.



Reflective target

The authors developed cognitive personal reflection by interviewing each student at the end of the lesson; Table was used, defining knowledge as ignorance of a concept.

Assimilation of the material		
Has understood	Yes	No
Knew before		
Has learned		
Would like to know		

Filling out the above Table 1 by students served to develop reflection and to conduct self-analysis of the material assimilation. After receiving the results, the analysis of the mastery of the topic was carried out, and the subsequent class and the structure of the presentation of the material were adjusted.

During the experiment, the reflective circle method was also used. At the end of the class, all the students and the teacher stand in a circle in which the teacher asks questions of the following nature:

- emotional state of students during and at the end of the class;
- what skills and knowledge were acquired during the training;
- the role of each student in the class;
- whether the acquired knowledge in the field of quality is applicable to mastering the other subject areas.

After receiving each student's response, the teacher summarizes the class drawing conclusions.

The third stage of work consisted of processing the results and summing up implementation of the elective course.

### Scientific results

Based on the results of a repeated survey of students in the experimental and control groups, the authors can confidently say that this phenomenon is applicable to ensure the quality of the educational process and this is important when learning using distance educational technologies. If during all the classes the student is taught the meaning of quality, its role in the formation of future competencies of a specialist, what parameters make up the quality of the educational process, the role of resource provision and the importance of factors, and at the same time, at the end of each class, the student is guided to cognitive reflection, this contributes to the deeper understanding of the studied material. So, the most effective mechanism for developing personality in the learning process, as well as solving problem and conflict situations during joint activities in groups, is cognitive reflection. During the study, reflection was considered as a phenomenon in the student's mind that arose after rethinking his activities and changing the direction of the thought process.

## Conclusions

With any methodological approach to distance learning, it is important to organize reflection with students. When using interactive teaching methods, the process of summing up an online class must be discussed with students in the group at the end of the class. At this stage, the teacher needs to evaluate how successful the group was in completing the task.

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## REFERENCES

1. Vajndorf-Sysoeva M.E. Metodika distancionnogo obuchenija. Uchebnoe posobie dlja vuzov. Moscow: Jurajt, 2017. – P. 195.
2. Zajchenko T.P. Osnovy distancionnogo obuchenija: teoretiko-prakticheskij bazis: uchebnoe posobie / T.P. Zajchenko. Saint Petersburg: RGPU im. A.I. Gercena, 2014. – P. 167.
3. Zakon Respubliki Kazahstan. Ob Obrazovanii: prinjat 27 ijulja 2007 goda, no. 319 III (dopolnenija 2023g.).

### Қашықтықтан оқыту кезінде оқушылардың ойлау процесіне рефлексияның әсері

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**Аңдатпа.** Рефлексия мәселесін және оның өзектілігін, студенттерді оқыту жүйесінде өз қызметін қайта қарау және студенттердің ойлау процесінің бағытын өзгерту құралы ретінде қарастырады, оқыту жүйесінде рефлексияны қолданудың алғышарттары мен артықшылықтары және оның студенттердің ойлау процесіне әсері келтірілген. Білім берудің түпкілікті нәтижесі (өнімі) (білім, дағдылар, қабілеттер, тұлғалық қасиеттер) педагог пен білім алушы арасында бірлесіп құрылады, өйткені материалды табысты игерудің негізі олардың арасындағы ынтымақтастық және білім алушының өз бетінше немесе педагогтың көмегімен жасаған қорытындысы болып табылады. Оқу процесінің мақсатында ақпараттық ағынның ұлғаюы байқалады (Дүниежүзілік желі, мәліметтер базасы және электрондық кітапханалар, форумдар, конференциялар, компьютерлік модельдер, индикаторлар мен тренажерлер, «виртуалды» бірлескен жұмысты ұйымдастыруға ықпал ететін желілік қосымшалар және т.б.). Оқу процесін ұйымдастыруда және оқытушы мен білім алушының арасында байланыс орнатылуы маңызды рөл атқаратын және бағалау құралы болып табылатын «портфолио» технологиясының сипаттамасы келтірілген. Зерттеу барысында, рефлексия оқушының санасында өз қызметін қайта ойластырғаннан кейін пайда болған және ойлау процесінің бағытын өзгерткен құбылыс ретінде қарастырылған.

**Кілт сөздер:** рефлексия, білім беру, білім беру процесі, қашықтықтан оқыту, өзін-өзі байқау, эксперимент.

### Влияние рефлексии на мыслительный процесс обучающихся при дистанционном обучении

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**Аннотация.** Рассмотрены вопросы рефлексии и ее актуальность как инструмента в системе обучения студентов для переосмысления своей деятельности и изменения направления мыслительного процесса обучающихся, приведены предпосылки и преимущества применения рефлексии в системе обучения и ее влияние на мыслительный процесс обучающихся. Конечный результат (продукт) образования (знания, навыки, умения,

*личностные качества) создается совместно между педагогом и обучающимся, так как основой успешного усвоения материала является сотрудничество между ними и вывод, сделанный обучающимся самостоятельно или при помощи педагога. В процессе обучения происходит увеличение информационного потока в учебных целях (Всемирная паутина, базы данных и электронные библиотеки, форумы, конференции, компьютерные модели, индикаторы и тренажеры, сетевые приложения, способствующие организации «виртуальной» совместной работы, и т.п.). Приведено описание технологии «портфолио», которая играет важную роль в организации учебного процесса и установлении связей между преподавателем и обучающимся и является наиболее важным оценочным инструментом. В ходе исследования рефлексия рассматривалась как явление в сознании обучающегося, возникшее после переосмысления своей деятельности и изменения направления мыслительного процесса.*

**Ключевые слова:** рефлексия, образование, образовательный процесс, дистанционное обучение, самоанализ, эксперимент.

## REFERENCES

1. Vajndorf-Sysoeva M.E. Metodika distancionnogo obuchenija. Uchebnoe posobie dlja vuzov. Moscow: Jurajt, 2017. – P. 195.
2. Zajchenko T.P. Osnovy distancionnogo obuchenija: teoretiko-prakticheskij bazis: uchebnoe posobie / T.P. Zajchenko. Saint Petersburg: RGPU im. A.I. Gercena, 2014. – P. 167.
3. Zakon Respubliki Kazahstan. Ob Obrazovanii: prinjat 27 ijulja 2007 goda, no. 319 III (dopolnenija 2023g.).