



Technology “Reading and Writing for Critical Thinking” As a Resource for Developing Students' Self Skills

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Article History

Received: 19 May, 2021

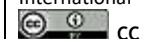
Revised: 29 June, 2021

Accepted: 20 July, 2021

Published: 26 July, 2021

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Abstract

At a time when the pace of changes in all spheres of human life is increasing and the future is predicted only tentatively, young people have to be prepared for their future life on the basis of analytical and critical thinking. The paper presents an analysis of the main ideas underlying the concept of using the technology “Reading and writing for critical thinking” by teachers in order to form some components of the self- skills competencies in their pupils: self-determination, independence, and self-organization skills. Teachers can use open learning technologies, including the technology “Reading and writing for critical thinking”, to develop these skills in their students. The choice of this particular technology is facilitated by the use of the basic principles of this technology (cooperation, mutual responsibility, rejection of possessing the truth, active communication, reflection), as well as a wide range of strategies and specific methods presented in it. The article also analyses the possibilities of using the technology “Reading and writing for critical thinking” in a tutor's work. The authors have made an attempt to correlate each technological stage with a certain stage of the tutor's activity: creation of an open educational environment, implementation of educational navigation, and scaling. The article is devoted to the characteristics of the textual educational environment as a condition of self-skills formation in students within the framework of individual and group tutorials with the use of the technology “Reading and writing for critical thinking”: openness, variability, abundance, lack of structure, provocativeness.

Keywords: Technology; Reading and writing for critical thinking, Self-determination; Independence; Self-organization; Strategies; Techniques; Tutor; Tutoring; Text-based learning environment.

1. Introduction

In the context of dynamic development of modern society and continuous changes that penetrate various spheres of human activity, apart from focusing on hard skills and soft skills, it is important for a modern person to focus on a special group of competences - self skills, which helps him to understand and organize himself, to hold his meanings and to self-determine himself. Self-skills largely imply the desire and ability for lifelong learning as a natural need of an established individual for self-development - stagnation is against human nature (Alibabić *et al.*, 2010).

The formation of competences in the areas of self-determination, self-organization, autonomy, etc., correlates with the ideas of postmodernism in education: although a person is invariably associated with the surrounding reality, knowledge does not "come from outside", but "is born inside the person" through his/her own skills (self-skills) (Bokova and Pluzhnikova, 2016).

At the same time, the orientation of teachers to the formation of students' self skills will allow them to flexibly respond to changes, interpret and evaluate information, generate new ideas, reflexively evaluate themselves, their knowledge and their own activities (process and result), cooperate with others to solve their educational tasks and find compromise solutions. However, the practical activity of teachers is still dominated by the focus on mastering students' subject knowledge and skills, and not on mastering the culture of self skills. The existing gap between the need by students to formation of competences in the areas of self-determination, self-organization, autonomy and the insufficient use of technology “Reading and writing for critical thinking” in pedagogical practice as a resource for formation of these competences determines the problem: how to use technology “Reading and writing for critical thinking” to form students' self-skills?

2. Conceptual Foundations for Using by Teachers the Technology “Reading and Writing for Critical Thinking”

Adolescence is known to be a "jump-start" in psychophysiological development. The adolescent's attention, previously directed towards learning about reality, returns to "self". At the same time, he tries to find his place in the world around him. By this time, the person has already mature enough thinking, the ability to analyze those or other phenomena of reality, and completely new qualities appear in his psyche - the tendency to self-analysis, self-control. At the same time, it is difficult for adolescents to understand and master the culture of self-skills on their own. To help students develop self-determination, self-organization, and independence skills, teachers conduct trainings, master and use open education technologies, including the technology “Reading and writing for critical thinking”. Conceptual foundations for using this technology as a resource for students' self-skills are as follows:

- basic positions of pedagogical philosophy of constructivism, on which open education technologies, and hence, the technology “Reading and writing for critical thinking”, in particular, are based;
- the basic principles that need to be followed in order to successfully use the technology “Reading and writing for critical thinking” and the technological strategies and methods it contains (Steel *et al.*, 1997-1998);
- characteristics of open education technologies, in particular, openness in relation to the subject, age and different organizational formats of work (Kovaleva, 2008).

In order to justify the use of technology “Reading and writing for critical thinking” development as a resource for building students' self-skills, let us consider the key positions of constructivist philosophy as applied to the tasks we have mentioned as well as the basic principles of work with the use of this technology.

The first statement of the pedagogical philosophy of constructivism is that ready-made knowledge cannot be passed on: each learner constructs it himself. In our view, this is due in particular to the components of self-skills such as self-determination, autonomy and self-organisation. This means, first of all, that the learner: is aware of their intentions and sees the goals, making certain choices (self-determination); understands what actions need to be taken and what resources are needed to implement their plans (self-determination); and is able to implement the plan they have in mind (self-organisation).

The second principle is that learning should be based on a learner's own experience, however minimal, and on their basic knowledge and understanding, even if this knowledge and understanding are not sufficiently accurate or complete. The most important thing is to enable students to see their own educational deficits and goals.

The third point is based on the key idea of the value of the learning process itself for the student and the actualisation of their own knowledge: understanding how they realise this process also occurs if self-determination, self-organisation and autonomy are formed.

3. The Principles on Which is Based the Technology “Reading and Writing for Critical Thinking”

Let us consider the principles on which the technology “Reading and writing for critical thinking” is based: cooperation; mutual responsibility; rejection of possessing the truth; active communication; reflection (Steele J., Temple C., Meredith K.).

Characteristic of cooperation in learning are common goals, joint search, active constructive interaction. This cooperation implies not only providing individual pedagogical assistance to the student in solving educational tasks, but also group (collective) independent work of students, including tasks that require constant or temporary interaction with an open educational environment. At the same time, assistance from the teacher and other students is not provided directly. It is developmental in nature: first, students are given the opportunity to reflect on their own activity and to analyse their strengths so that they can make their own decisions and choices responsibly.

The principle of mutual responsibility is manifested in the balance of interests of all participants in the educational process on the basis of joint establishment of ways and norms of interaction to solve educational tasks. By applying technology “Reading and writing for critical thinking” to develop students' self-skills, teachers can use different methods, techniques and strategies that will ensure the implementation of the principle of mutual responsibility.

The refusal to possess the truth is, in our view, primarily linked to a well-developed debating mindset. It helps a person to be interested in other views, to have a constructive approach, to constantly correct their point of view, to sharpen it, to find weighty arguments in other people's opinions, to catch changes in behaviour and understand their cause, to make a justified compromise (Vagapova, 2001). The implementation of this principle implies the ability of students to activate their thinking processes, guide their thinking, including internal dialogue, self-criticism, allow them to look at their own thoughts, decisions and actions "from the outside", relate them to the judgments, arguments and arguments of other students in the process of their educational interaction.

To ensure positive communication and mutual understanding between all participants of the educational process, conditions must be created in which active communication is possible. Any value becomes meaningful only when it can be compared with other values on the basis of a dialogue aimed at exploring the meaning, 'testing' the value in action and actively communicating with others. Teachers can ensure this active communication by applying technology “Reading and writing for critical thinking” and its strategies for mutual learning in the classroom.

Reflection is present at all stages of critical thinking technology. In a broad pedagogical context it is defined as: "the process of a subject's self-cognition of internal mental acts and states"; "a thinking (rational) process aimed at analysis, understanding, awareness of oneself: one's own actions, behavior, speech, experience, feelings, states, abilities, character, relations with and to others, one's tasks, purpose, etc."; "the process of making sense of

something by studying and comparing"; "the human thinking capacity for critical self-analysis"; "reflection, self-observation, self-cognition" (Psihologicheskij *et al.*, 1999).

In all these definitions of reflection we see its connection with such features of thinking processes as awareness, analysis, and criticism.

In the context of forming students' self-skills, we like to treat reflection as an ability of an individual to self-analyze, to comprehend and rethink which stimulates the processes of self-knowledge (Zinchenko and Morgunov, 1994). Reflection, as one of the main principles of the technology "Reading and writing for critical thinking", enables students to identify their doubts, discuss them with a teacher and other students, clarify and specify their educational preferences, understand the meaning of new experiences, and construct new ideas.

4. The Interpretations of Critical Thinking

Why is it important for teachers to pay special attention to the development of critical thinking, using the technology "Reading and writing for critical thinking" in order to achieve modern educational outcomes related to self-skills?

At the time when the pace of change in all spheres of human activity is increasing and the future is predicted only tentatively, young people need to be prepared for this future life on the basis of analytical, critical thinking. It should be noted that critical thinking, according to D. Kluster, begins with questioning - in pedagogical practice questions are widely used to work with cognitive interests of schoolchildren.

The interpretations of critical thinking presented by psychologists and educators reveal different aspects of this complex concept. According to the authors, critical thinking is:

- open-minded thinking which does not take any information for granted - this kind of thinking develops through "putting new information on top of personal life experience" (Zair-Bek, 2011) - this aspect of critical thinking enables a schoolchild to be receptive to new trends, to be aware of different opportunities for their educational development;

- the ability to critically evaluate the results of one's thinking activity (Savost'janov, 2007). In our opinion, this interpretation includes the reflective component of critical thinking - a schoolchild can refuse their decisions if they contradict the requirements of their educational task by carrying out a reflective analysis of such decisions. This aspect of critical thinking manifests itself in the realisation of one of the principles of working with the technology "Reading and writing for critical thinking" - the principle of not possessing the truth;

- the ability to take individual responsibility for one's choices and, at the same time, it is a complex process which makes it possible to develop a dialogue in joint activities. This interpretation of critical thinking, in our view, correlates with such principles of work in the technology "Reading and writing for critical thinking" as cooperation, active communication and responsibility.

Thus, having considered the main ideas underlying the concept of teachers' application of the technology "Reading and writing for critical thinking" to achieve contemporary educational outcomes, we can conclude that the basis for building the whole process aimed at shaping such self-skills as self-determination, independence, and self-organisation using technology "Reading and writing for critical thinking", is philosophical, psychological and pedagogical foundations of the technology itself and the basic principles of its work.

5. Techniques and Strategies of the Technology "Reading and Writing for Critical Thinking"

As noted above, critical thinking begins with asking questions, which is why teachers widely use the techniques of the technology "Reading and writing for critical thinking" to develop it. Let us consider some of them.

The technique "Thin and Thick Questions" presents a two-part table. In the column "Thin questions", students formulate questions that require a straightforward answer (otherwise known as factual questions), and in the column "Thick questions" they answer questions that require more in-depth study and more detailed answers. At the challenge stage this technique is used to identify and generate students' cognitive interest, at the reflection stage it is used to demonstrate understanding of the topic and expand students' cognitive horizons.

The "Interrogative Words" technique is a table with two columns. In the right column pupils write down the key concepts of the topic, while in the left column they write questions related to their cognitive interest with the help of interrogative words. Pupils make these questions at the challenge stage and on the basis of these questions teachers organize pupils' searching activity (meaning stage).

The method "Plus-minus-interest" is used when studying events (phenomena, objects) which have both positive and negative sides. This method helps to stimulate pupils' emotional sphere, because the columns "Plus" and "Minus" contain information that suggests pupils' evaluation of positive and negative sides of the event studied. In the column "Interesting", students write down questions about the topic that they would be interested in exploring.

Techniques for working with questions help students to self-determine the most interesting topics for them to explore within a particular subject. Other technological methods ("INSERT", "marking table", logbooks, diaries, etc.) allow teachers to organize students' independent activity in working with information (textbooks, fiction texts, videos), which to a certain extent contributes to students' autonomy.

Teachers use the "IDEAL" strategy for learning and solving cognitive problems. It involves dealing with a problem step by step, starting with the identification of the problem, searching for solutions and assessing them, then selecting and arguing the best method from the students' point of view and drawing conclusions. Teachers can use this strategy in classroom activities, for example, to identify the causes of intergenerational conflict and how to deal

with them effectively. First, different causes of conflict are identified and problematic issues are formulated in a collaborative process, and then students are grouped together to find ways to address the issue that is most relevant to them. At the end of this work, each group presents a way of solving "its" problematic issue and provides arguments as to why this is the best way.

In order to master the ways of reflective evaluation of the acquired knowledge and their own activity (process and result), teachers use a synkwine or an essay as a form of written reflection and the technological method of "double-row round table". If the aim of the lesson is to discuss a particular problem with pupils and to learn about their point of view on it, it is worthwhile using the technique of the technology "Reading and writing for critical thinking" called the 'double-row round table'. The participants form two circles -- an "inner" circle and an "outer" circle. Pupils in the inner circle express their point of view on the problem in a succinct manner, without criticizing other students' opinions. The participants in the "outer circle" briefly write down the statements of the inner circle, prepare comments and questions and then express their opinion on the issue and link it with the previous opinion. The teacher could co-ordinate the work and make notes but should not interfere with the contents of the statements. After the discussion, each participant briefly writes down their conclusions or presents them orally, and the teacher summarizes by presenting their comments.

Thus, by using strategies and techniques of this technology in lessons and in extra-curricular activities, teachers promote the development of some self-skills.

6. The Technology "Reading and Writing for Critical Thinking" in the Tutoring Activity

The technology "Reading and writing for critical thinking" as a resource for developing students' self-skills can also be used by tutors/trainers and teachers with tutor competence. According to T.M. Kovaleva's definition, a tutor is a teacher who implements the principle of individualization and accompanies the construction of an individual educational program by schoolchildren (Kovaleva, 2010). A tutor works with a trainee's educational interest and, having taken it as a basis, together with him/her participates in planning and implementation of cultural educational navigation, which is the essence of tutor's/trainer's activity and is the result of analytical discussions between a trainer and a trainee during tutor consultations or tutorials (individual or group) (Khachatryan and Kovaleva, 2019).

Tutor's/trainer's support of the process of forming trainee's self-skills such as self-determination, autonomy and self-organization will help a trainee to identify their learning priorities and goals in education, to reflect on the basis of their own choices and to understand that their autonomy is manifested not only when they do everything themselves, but above all when they understand whether a particular action they can perform themselves or needs to cooperate or ask for help for this purpose.

As we consider the components of self-skills such as self-determination, autonomy, and self-organisation, let us analyse how tutors and tutor-competent teachers can use the technology "Reading and writing for critical thinking" to achieve these contemporary educational outcomes.

Self-skills formation can be structured according to the stages of a tutor's action: creating an open educational environment, implementing educational navigation and scaling. Each stage of the technology "Reading and writing for critical thinking" corresponds to a certain stage of a tutor's activity. The stages of the technology "Reading and writing for critical thinking" and the stages of tutor's activity are correlated with each other as follows: at the challenge stage textual educational environment is created; at the stage of meaning technological instrumental navigation is carried out; at the reflection stage scaling is carried out (Khachatryan and Kovaleva, 2021). At the same time, it should be noted that it is the goals of the challenge stage that result in the creation of a textual educational environment, i.e. all pedagogical activity specially organized at this stage leads to the creation of such an environment.

Let us consider step by step how work of tutors or teachers with training competence can be organised at each stage of work in the technology "Reading and writing for critical thinking", aimed at becoming self-determined, independent and self-organised. In this case we propose to use such organizational forms of tutor support as tutor consultations and tutorials (individual or group) in the process of all this pedagogical work.

In tutor's practice individual consultations are often carried out when a trainee has to discuss significant issues related to their education with the tutor. At the initial stage of interaction with the tutor it is necessary for the trainee to understand the tutor's character, communicative skills, educational interests and it is advisable to have an individual consultation with each trainee. This can be a conversation on specially prepared questions with these objectives in mind. The result of each meeting will be an educational product. For example, the result of the first consultation can be a personal resource map of the subject of interest.

Since a tutor can support the process of self-skills development for several trainees in parallel, each trainee will have his own personal-resource map of subject interests after the initial individual tutorial, on which subject areas of greatest interest for the trainee will be recorded. Such maps can then form the basis for organising and conducting a group tutorial.

After individual consultations with each tutor, we recommend that trainees conduct the first group tutorial using the technology "Reading and writing for critical thinking". At this tutorial, group work is organised to present trainee's educational interests as documented in their personal resource maps. In order to group trainees into groups of similar interests at the challenge stage (Stage 1 of the technology "Reading and writing for critical thinking") the tutor asks the trainees to present the content of their personal-resource map of their subject interests in 2-3 sentences. While the trainees are presenting their maps, the tutor notes the key ideas on a flipchart, and each trainee, listening to

other trainee's presentation, writes down the ideas that coincide with their own ideas. To perform this task, the technological technique "Venn rings" ("Common - unique" is another name for this technique) can be used. In this graphical form general ideas reflecting the content of the map will be written in the centre of the circle, and in the circles intersecting with the central one, each tutor will allocate those ideas of the map which are not reflected in the general ring. Let's note that for the trainee students who listen to other students' presentations, take notes and graphically draw them out, such work corresponds to the technological stage of reflection (stage 2 of the technology "Reading and writing for critical thinking"). For the speakers and presenters - this form can be correlated with the stage of reflection, because during the presentation of the personal-resource map of their subject interest the trainee's attention is once again focused on clarifying the meaning of the main ideas. In the process of verbalizing their own thoughts the trainee may have questions for further research which they can then discuss with other students and the tutor/trainer.

After presenting the maps, the trainees are grouped according to similar key ideas and develop a plan-schedule for implementing the common part of their personal resource maps of the subject interest. The plan includes: drawing up a list of sources to be studied and defining the order and timing of the work on them. According to this plan everyone takes responsibility for searching and revising certain texts (lectures, books, textbooks, articles, videos, etc.), translating them into any graphic form (for this purpose the trainee needs to use specific strategies and techniques of the technology "Reading and writing for critical thinking") and preparing annotations to them in accordance with the deadline indicated in the plan-schedule. Thus, the educational product of the first group tutorial can be a completed graphic form "Venn Rings" and a plan-schedule based on the common educational interests of the trainees.

Now let us analyze how such organization of trainee's activity enables tutors to direct the educational process at the first stage of work in the technology "Reading and writing for critical thinking" to the formation of such personal competencies as self-determination, independence and self-organization. Firstly, every trainee during the presentation of other personality-resource maps not only fixes ideas common with their own map, but, at the same time, corrects and clarifies their educational interest and starts to see their educational goals more clearly.

Secondly, by drawing "Venn rings", they select, through noting down in circles that overlap with the central one, those aspects of their educational interest that have been "left out" of the general interest.

Thirdly, independence in such tutorials can manifest itself in the fact that each trainee recognises when they need to unite and cooperate with others to pursue an educational interest and when they can act independently.

And finally, drawing up a plan-schedule in groups of common educational interests and sharing responsibility for individual tasks - this kind of trainee's activity is aimed at developing their self-organisation skills and understanding how they can fulfil their educational needs more effectively.

It should be noted that we have presented as an illustration only one of many possible variants of the first stage of tutors' or teachers'/trainers' work on trainees' self-skills formation with the help of the technology "Reading and writing for critical thinking".

The next stage of work with the trainee can be carried out within a tutorial in order to make an individual work plan for those aspects of their interests that were not the subject of general discussion at the group tutorial and to find ways to solve possible problems related both to its implementation and to the individual task within the group interaction and co-learning. This individual tutorial also discusses methods, strategies and techniques that tutors can use when working with new information, including annotating different texts.

Let's consider the strategies and techniques presented in the technology "Reading and writing for critical thinking" which can be offered to tutors to organize trainees' activity on work with different sources of information presented in different formats.

Let us note that in the process of tutor's support we recommend to use the resource scheme of general tutor's action developed by the researchers which will help each student "... firstly, to develop their cognitive interest, secondly, to form a culture of work with their own education, building an individual educational program based on specific resources".

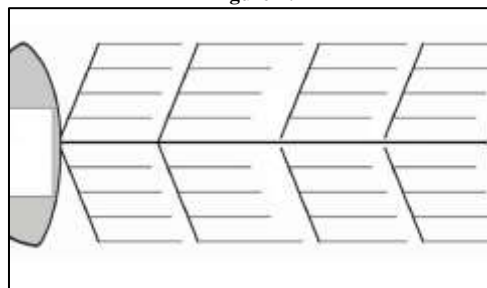
If the personal-resource map of the trainee's subject interest, made together with the tutor, certain lectures were indicated as a resource, then the tutor can offer them such technological methods as: two- or three-part diaries, logbooks, different tables (conceptual, comparative), cluster, etc. to comprehend the content of these lectures and their main ideas. It is important that the trainee is given methodological advice on how to use technological tools. For example, a "two-part diary" or "three-part diary" would help them to record those lectures or lecturer's thoughts that in their opinion are the most interesting or controversial, or puzzle them (in diaries they are written in the left column). After listening to the lecture the student has to revise its content. To do this they not only use the summary of the lecture, which is usually chaotic and incomprehensible to them, but a two- or three-part diary, containing only meaningful parts of the lecture that the student wants to learn. For that purpose, the student makes comments on each idea or thought that they have written down while listening to the lecture (i.e. they fill in the right-hand column of the two-part table if they have worked with the two-part diary, or the second column of the three-part table if they have opted for the three-part diary). If, however, students have questions when writing down their comments, they enter them into the third column of the table and then work with them over time (studying the literature, looking for answers). This kind of work with the content of the lecture enables students to reflect on all of the information they have received as a result of using one of the methods of the technology "Reading and writing for critical thinking" (the active listening method).

If the tutor and the trainee have identified seminars or scientific conferences in the personal-resource map of the trainee's subject interest, the tutor can suggest a "Conceptual Table" for meaningful work with the information

discussed at these events, in which the opinions and views of all participants presenting at the conference or seminar are collected according to certain categories of information. The student can then use this table to analyse and summarise the information from the workshop or scientific conference and to develop their own informed opinion on each issue of interest. Students can also verbalize their thoughts, ideas and perspectives using different forms of reflective writing found in the technology "Reading and writing for critical thinking", such as argumentative essays. When writing this work, a learner expresses his or her own point of view on an issue that is of most interest to them, argues their position, supporting it with facts and arguments. The tutor may suggest to the trainee another form of essay, which will have emphatically subjective interpretation. In contrast to an argumentative essay with its clear structure, such an essay is a free composition and is oriented to spoken language. It should be noted that the use of different forms of written reflection allows a trainee to use their own knowledge from other fields when writing an essay, to deepen and extend the direction of their research. This too can help them to reach a new scale of their educational activity.

An "inventory" of technological methods and strategies at all stages of tutor's support will allow trainees to relate each of these methods and strategies to educational tasks to be solved while working with different informational or artistic material (text, article, fiction or documentary film, books, manuals, etc.). For example, if the trainee is working with a particular problem and needs to find the causes of the problem and to find arguments and facts to support these causes, the tutor may recommend that the trainee should work with the Fishbone technique. It is a graphic form in the shape of a fish skeleton: at the head of the fish skeleton the student formulates and writes down the problem, on the upper bones of the skeleton he writes down the reasons, and on the lower bones he records facts, arguments that prove the existence of one or another reasons indicated on the upper bones. As a result of working with the text, they draw a conclusion independently and draw it on the tail of the fish skeleton (Figure 1).

Figure-1.



Organising work with texts using strategies and techniques of the technology "Reading and writing for critical thinking" involves taking into account the type of text with which students need to work in order to realise their individual educational route: for example, some techniques and strategies can be used when reading information and discussing texts ('notation marks', 'marking table', etc.), but they are not suitable for working with fiction texts, films or any video material; other techniques and strategies can be used both when working with informational texts rich in complex concepts and with fiction texts presented in different forms ("two-part diary", "three-part diary", "plus-minus-interest" or "plus-minus-question", "cluster", "thick and thin questions" or the "Risk" questioning strategy, "onboard journal" and others). A modification of the "On-Board Log" technique (Burke C., translated: I.O. Zagashhev) proposed by I.O. Zagashhev allows a student to evaluate the quality of their elaboration of the material.

This is a form on which, on one side (left), he records the key concepts contained in the text. On the other (right), he draws a diagram or a picture; at the bottom, he writes down the connections he can make, and after that, the questions he has after reading the text. The technique of parallel texts involves working with the text at different levels: at the level of meaning; at the level of emotions and associations: while reading the text, he or she uses questions that allow him or her to pay attention to those moments in the text that surprised and interested him or her and to record his or her associations, feelings, sensations and thoughts. Such techniques can also be used in the process of self-education.

At the next group tutorial, the tutor can organise group work using the Zigzag technology strategy. Since at the first group tutorial each trainee, according to the plan-schedule of tasks based on common educational interests, took responsibility for finding certain texts (lectures, books, textbooks, articles, videos, etc.), translating them into any graphic form, using strategies and techniques of the technology "Reading and writing for critical thinking", and preparing annotations for them, at the second group tutorial each student in the group presents his work results on all the materials in the individual task.

As each trainee presents, the remaining students write down comments on the main ideas and formulate questions to clarify their understanding, as well as questions on the aspects that interest them most and may require further investigation. After the trainees have presented their results, the tutor writes down on a flipchart all the questions for further investigation. Using the "Clouds of Meaning" moderation technique, the tutor together with the trainees distributes these questions into clouds on a common semantic basis, then the students compose one problem question for each block of meaning and join in expert groups to find the best way to solve it (3-4 groups).

To work with the problem question the tutor suggests that the trainees should use problem solving strategy presented in the technology "Reading and writing for critical thinking"- "IDEAL". The first and second stages - "identify the problem (I)" and "get to the bottom of it (D)" - were passed at the stages of working with "clouds of meaning" and formulating the problem as a question. The third stage - "there are solutions! (E)" - the trainees,

working in groups, generate as many solutions as possible by brainstorming. The main condition for this stage is the ban on criticism. The more solutions the trainees come up with, the better. All the suggested ideas in each group are drawn up in any graphical form convenient for them (in the form of a cluster, a table, a scheme, etc.).

At the fourth stage - "now get to work (A)" - an evaluation is given to each option for solving the problem, and the best option is chosen. The last stage - "logical conclusions (L)" - they analyse the actions taken to solve the problem and draw logical conclusions (these can also be drawn graphically). The tutors also analyse all the work they have done. The tutor then puts the trainees into cooperative groups on the basis of their work on different problematic issues.

In cooperative group each person takes turns in presenting the results of the work in his or her expert group to others, reflecting on this work and answering questions. Based on the results of the work in cooperative groups, the students working only on their "expert" problem question were also able to see the results of other expert groups, to ask questions and to reflect on how they solved the problems.

Let's analyze the second group tutorial and the trainees' activities in the context of tutors' creating conditions for formation of trainees' self-skills: self-determination, independence and self-organization skills.

The presentation of the results of work on the resources within the individual task allowed each trainee, firstly, to realize and evaluate his own ideas and actions (because when a person shares his thoughts with others, his own thought is perfected (D. Klouster - let's call it primary reflection), and since a student received feedback during his talk through the comments of other trainees, his talk, becomes a special subject of analysis and assessment by others, gave them an opportunity to realize their own competences once again.

Other students, creating their own comments on their groupmates' presentations, on the one hand, mastered new material, formulated questions of different levels, using methods of active listening suggested by tutors, and on the other hand, analyzed the information coming from the tutor, his reasoning and other students' comments, which allowed them to form their own opinion on the material and relate the information received to their goals and educational interests.

The next stage of work in expert groups with problem questions allowed everyone to realise the value of cooperation for joint search and finding the best way to solve the problem. At the same time it should be noted that all the trainees' activities were organised in accordance with the principles of the technology "Reading and writing for critical thinking": cooperation (based on common goals), mutual responsibility (there appears positive interdependence between trainees through formulating a problem for joint solution, using joint resources; everyone feels responsible for presenting their work results in the expert group, Zigzag strategy), not possessing the truth (discussing all ideas and options, strategy of problem solving), active communication and self-reflection (the course of tutorial sessions).

Thus, the technology "Reading and writing for critical thinking" gives tutors and tutor-competent educators an opportunity to create together with trainees a text-based learning environment with appropriate characteristics of an open educational environment, to perform technological instrumental navigation with the help of strategies, methods and techniques of working with texts presented in the technology, which allows students to reach a new scale of realization of their educational interests.

7. Characteristics of Text-Based Learning Environment

Let us consider characteristics of text-based learning environment as a condition for the formation of trainees' self-skills within the framework of individual and group tutorials using the technology "Reading and writing for critical thinking".

These are the following characteristics: openness, variability, redundancy, lack of structure, provocativeness (Khachatryan and Kovaleva, 2020).

Openness. The goals of the technology "Reading and writing for critical thinking", its functions, as well as the interpretation of the concept of "critical thinking" (S.I. Zair-Beck) indicate the focus on openness and the formation of personal competences in the sphere of self-determination, independence and self-organisation. At each stage of work this process is tracked through: everyone's definition of their own goals, reflecting their educational interest (formulated at the stage of challenge - through the use of techniques for implementing its functions: keywords, confused logical chains, brainstorming, clusters, etc.); adjustment of these goals in the process of realization of educational interest through autonomous work with texts (at the meaning stage for meaningful work with information various technological methods and strategies are used: conventional signs, logbooks, two- and three-part diaries, plus-minus-interest, fishbown, strategies of work with questions, etc.) and reading texts from their chosen position, which they set themselves; setting new goals as a result of meaningful work with texts: texts comprehension (articles, lectures, books, etc.) collected by trainees to work on their educational interest leads to its expansion and a new scale of students' educational interest.

Variety. At each stage of work in the technology "Reading and writing for critical thinking" a trainee is provided with different variants of realization of his cognitive interest: at the stage of challenge - through a set of different options of tasks using several techniques of the technology "Reading and writing for critical thinking"; at the stage of meaning - through the possibility of using different positions of reading texts (critic, author, reader, screenwriter, director, politician, etc.); at the stage of reflection - through different forms of presenting the results of their work (schemes, clusters, tables, writing an essay, making a plan-project on further research of the issues related to their cognitive interest).

Redundancy. Creating a redundant educational environment at each stage of work in the technology "Reading and writing for critical thinking" is a condition ensuring a tutor's subjective position through manifestation of

independent choice (tasks, forms and ways of achieving goals; texts, techniques or strategies for working with them, position of their reading; forms and ways of presenting the results of their educational activity).

Lack of structure. This characteristic of the learning environment is manifested in the fact that a tutor provides tasks in a free form without specifying the sequence of their performance. At the meaning stage this characteristic manifests itself through the saturation of the textual educational environment in which trainees themselves have to determine what (which text) and how they will read this or that text (from which position), what technological tools they will choose for reading.

Provocativeness. This characteristic of an open educational environment also manifests itself at each stage of work in the technology "Reading and writing for critical thinking": at the challenge stage - in the choice of tasks developed by a tutor taking into account different levels of complexity (for trainees it is always a challenge); at the meaning stage - through considering the problems identified in the texts from different positions to reach a deeper understanding and awareness of the complexity of texts (this applies more to such types of texts as fiction discussion or information discussion texts). Each reading position can limit those or other aspects of the problems contained in the texts; at the stage of reflection - as well as at the challenge stage - through the choice of tasks (developed by a tutor or a teacher with tutor competence, or by a trainee himself) for processing and transforming the information a trainee worked with at the meaning stage, technological methods and ways, forms of presenting the results of his work.

8. Conclusion

Thus, in this article we have considered the process of forming some components of group of self-skills competences by using the technology "Reading and writing for critical thinking": self-determination skills, independence, self-organization. Self-determination manifests itself in students' awareness of their intentions, interest and vision; independence - in the ability to implement their own action (individually or through cooperation with others); self-organization - in planning, the ability to work with various resources and implement the plan.

Teachers can use different forms (trainings, seminars, class hours, etc.) and open-ended technologies to develop these skills in students, including the technology "Reading and writing for critical thinking". The choice of this particular technology is facilitated by the basic principles of this technology (cooperation, mutual responsibility, denial of possession of the truth, active communication, reflection) as well as by the wide range of strategies and concrete work methods presented in it.

We have also analyzed the possibilities of using the technology "Reading and writing for critical thinking" as a resource for students' self-skills formation, and have correlated each technological stage with a certain stage of tutoring activity: creation of an open educational environment, implementation of educational navigation and scaling. All this, we hope, will help a modern teacher to form such important life skills (competences) as self-determination, independence and self-organisation.

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