

## The Self-Development of Non-Academic Intelligence Forms in a Future Pedagogue

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### ABSTRACT

To form the professional competence in a future pedagogue, just academic knowledge is not enough. Non-academic forms of intelligence represent important human abilities in the social reality. Non-academic form of intelligence consists of social, emotional, and practical forms. They are responsible for the full development of the human personality, the ability to react quickly to a situation. Non-academic forms of intelligence develop in the future teacher his qualities required in professional activities, such as promptness, flexibility and creativity. The purpose of this paper, on the basis of teaching and learning materials, is the theoretical development of the methodology for self-development of non-academic intelligence forms in a future teacher. The developed methodology is divided into three stages: "the development of social intelligence", "emotional intelligence development", "practical intelligence development." The program is based on the trainings that are focused on the job of different forms: tests, surveys, exercises. A collective form helps to improve communication skills, to enhance emotional preparation for any situation and to develop the skill of applying knowledge in practice. The research materials can be used in educational practice of pedagogical universities for the formation of professional competence in future teachers.

### KEYWORDS

Social intelligence, ecological intelligence,  
practical intelligence, developing exercises,  
professional competence

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### Introduction

The highest component of personality is its professional competence. Professional competence is the integrated characteristic of the subject's personal qualities, reflecting the level of intelligence and training to perform professional activities.

Professional competence is developed during the educational process (Kovalev et al., 2016). The problem is that to form the professional competence in future teacher, only academic knowledge is not enough. The modern teacher should be characterized by rational behavior, effective interaction with others and self-control.

To achieve these requirements, future teachers need to develop non-academic forms of intelligence to be able to conduct professional activities in the changing modern circumstances. Non-academic form of intelligence consists of social,

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emotional, and practical intelligences (Mayer, Salovey & Caruso, 2008). These forms of intelligence provide the best possible development of the professional competence in a future teacher.

Non-academic forms of intelligence began to be studied by psychologists and pedagogues in the twentieth century. The American psychologist Thorndike (1920) introduced the concept of «social intelligence». At the initial stage of research of social intelligence, it was regarded as a form of social cognition, the ability to understand people. At the moment, the concept of "social intelligence" has no single definition; therefore, supporters of different psychological schools differently characterize this phenomenon:

1. The ability to decode social information — from the ability to recognize non-verbal stimulus to the adoption of correct social judgment (Belova, 2004).
2. The effectiveness or adaptiveness of social behavior (Baron, 2013).
3. Any social skill that can be measured (Sheth et al., 2014)
4. The ability to understand the behavior of other entities (Rahim, 2014)
5. The personal vision of the mental condition of the surrounding individuals (Saxena & Jain, 2013)

Based on the above-mentioned characteristics, it follows that social intelligence is the ability to understand the social reality. Social reality is the most difficult type of reality according to two factors:

1. Social reality includes natural objects, objects of material culture, psychical and mental attitudes;
2. The subject is directly included in social reality; all kinds of interaction with the reality in the social aspect are represented in unity.

The main difference between the social intelligence and the structure of general intelligence is that in social intelligence, personal property plays the main role. A structural model of social intelligence consists of two levels: socio-cognitive and socio-behavioral.

Emotional intelligence as a form of non-academic knowledge began to develop in the last decade of the twentieth century (Mayer & Salovey, 1993). Emotional intelligence is a group of mental abilities that allow recognizing and understanding your own emotions and the emotions of others (Mayer, Salovey & Caruso, 2008). The possession of emotional intelligence is caused by the labor market needs, which demands professionals who have the ability to make decisions without conflict in joint activities (Mortiboys, 2013; Pekrun, 2014). For teachers, whose professional activity is prone to stress due to high responsibility, the possession of emotional self-control is a key characteristic.

The relationship of emotional intelligence and mental ability can be traced to the following statements (Mayer & Salovey, 1993):

1. Certain emotions can increase the productivity of the thinking process and to direct attention to specific tasks;
2. Effective emotions management influences the ability to be distressed and to be honest;
3. Inability to assess and to verbally express emotions suggests the possible lack of correlation between brain regions, which ensure the unity of thinking and emotions.

The problem of emotional intelligence research is that this concept includes characteristics related to social intelligence. Therefore, emotional intelligence should incorporate features that directly affect the level and individual characteristics of emotional intelligence (Lucina & Ushakova, 2004).

Structurally, emotional intelligence consists of four components, which together describe the four areas of emotional mental abilities:

1. to accurately discern your own emotions and the emotions of others (Castillo et al., 2013);
2. to use emotions in order to improve the efficiency of mental activity (Mayer, Salovey & Caruso, 2008);
3. to understand the meaning of emotion (Corcoran & Tormey, 2012)
4. to manage emotions (Chew, Zain & Hassan, 2013).

Thus, the emotional intelligence is the ability to process the information contained in emotions, and to use emotional information as the basis for thinking and decision-making in real interaction with people.

The last non-academic form of intelligence is practical intelligence. Practical intelligence is the ability to apply academic knowledge. In addition, practical intelligence means the application of knowledge based on individual experience implicitly, the so-called "tacit knowledge" (Sternberg et al., 2002).

Thinking meta-components, according to Sternberg (2002), are the characteristics of practical intelligence:

- recognition of a problem;
- definition of a problem;
- formulation of decision strategy;
- presentation of information;
- the allocation of resources;
- the monitoring of problem solution and its evaluation.

The following statements prove that there is a difference between academic and practical intelligence, and that the latter is an independent structure (Sternberg et al., 2002):

1. Tacit knowledge usually occur independently without any or with very little external circumstances;
2. Implicit knowledge is seen as procedural in its nature in the form of "condition-action" pair;
3. Due to the fact that the bulk of knowledge is acquired on the basis of personal experience, they have practical meaning only for the person who has them.

The structure of practical intelligence, as social and emotional, has two main components: cognitive and behavioral – this component is the backbone. Thus, non-academic forms of intelligence directly affect the professional competence of a future teacher. Therefore, the aim of this work is to develop a program for self-development of non-academic intelligence forms.

## Methods

Methodological basis of research consists of: the provisions on the leading role of activity in personality development, on the dialectical unity of theory and practice; the methodological concepts of teacher's personality formation in the pedagogical education system; the methodological considerations in the personality

psychology; the axiological approach to the educational process; development of value orientations in family and school.

To achieve this goal, we have used a range of complementary research methods, such as: the study and analysis of special philosophical, psychopedagogical and scientific-methodical literature on the research problem; theoretical methods of analysis, synthesis, and theoretical modeling. We have generalized the pedagogical experience on the research problem, and conceptualized the educational practice. We applied the methodological principles, certain information paradigm the theory of self-organization.

## Results

The program to develop the non-academic intelligence is aimed at the formation of cognitive and behavioral levels needed for effective professional activity of a future teacher. The program is divided into three stages:

1. The development of social intelligence.
2. The development of emotional intelligence.
3. The development of practical intelligence.

The development of these specific abilities is manifested in the actions, skills in various types of activities and communication (Table 1).

**Table 1.** The structure of intelligence leading to professional success

Type of intelligence levels	Cognitive level
Social intelligence	<ul style="list-style-type: none"> <li>– social knowledge - knowledge about people, knowledge of social rules of etiquette, moral behavior, understanding of events, situations and other people;</li> <li>– social memory - a memory for names, faces;</li> <li>– critical evaluation - verbal decoding of nonverbal information: feelings, sentiments, motives of people's actions, behavior within the social context;</li> <li>– social forecasting - the ability to foresee the consequences of your behavior, based on the available information, formulating plans of your own actions, to predict the behavior.</li> </ul>
Emotional intelligence	<ul style="list-style-type: none"> <li>– emotion recognition;</li> <li>– the ability to establish the presence of a particular emotion in yourself and in other people;</li> <li>– identifying emotions - the ability to establish what emotion you or another person is experiencing (express in words);</li> <li>– understanding emotions - the ability to understand the causes and factors that caused the emotion, and to determine the consequences that it may bring about.</li> </ul>
Practical intelligence	<ul style="list-style-type: none"> <li>– fundamental professional knowledge;</li> <li>– applied knowledge (applied, methodological, technological);</li> <li>– personal (tacit knowledge) - on the basis of experience gained in real life.</li> </ul>

**Table 1. Continued.**

Type of intelligence levels	Behavioral level (activity-procedure)
Social intelligence	<ul style="list-style-type: none"> <li>– social perception - ability to judge people, the ability to perceive social situations adequate social knowledge, ability to listen, sense of humor;</li> <li>– social interaction - an adequate adaptation to the interpersonal interaction, the ability to communicate with people, willingness for joint business, creativity, the ability of collective interaction and, as the highest type of this interaction, a collective creative work;</li> <li>– social adaptation - openness in relations with others, ability to cohabit and to easily come together with other people, ability to explain and convince others;</li> <li>– self-esteem - the ability to judge yourself, reflection and monitoring of your own development, the evaluation of unused alternative possibilities.</li> </ul>
Emotional intelligence	<ul style="list-style-type: none"> <li>– Controlling the emotion and its intensity, self-regulation and regulation of the excessive emotions of others;</li> <li>– controlling the external manifestations of emotions;</li> <li>– the use of emotions to solve problems - the ability to raise a particular emotion.</li> </ul>
Practical intelligence	<ul style="list-style-type: none"> <li>– the skills of educational-cognitive activity of students, allowing them to successfully master academic and personal (implicit) knowledge;</li> <li>– skills of value-oriented activities that enable students consciously to develop and formulate goals, motives of their activities, adjust their values, both at the theoretical level and at the level of everyday consciousness;</li> <li>– skills of transformative activities that allow students to successfully carry out design and technological steps at both reproductive and creative level;</li> <li>– skills of communicative activities that enable students to master the forms, methods, techniques of professional communication;</li> <li>– skills of aesthetic activities, allowing students to get creative satisfaction from professional creativity.</li> </ul>

### **Social intelligence**

At the first stage of the program, it is necessary to develop adaptive ability of students to communicate with a team on professional and creative topics. Classes can be held in academic and in non-academic form: circles, clubs, competitions, collective, pair-individual forms; involvement in the social life of the faculty or the University. At this stage, the eight exercises are suggested:

1. "Declaration of myself" (according to Virginia Satir). This activity is aimed at realization by the student of his/her former self, awareness in being a self-sufficient person, acceptance of self as individual and unique personality. The essence of the exercise is the following: participants are seated, and to a tune the Declaration of self is read, "I'm friends with myself and love myself, I can gently and tolerantly discover the sources that puzzles me and learn more and more things about myself. All I see and feel, all I say and I do, all I think and feel at the moment, is mine. This is exactly allowing me to know where I am and who I am at the moment. When I gaze into my past, look at what I saw and felt, what I said and what I did, what I thought and how I felt, I see



things that not quite suit me". This form of meditation allows participants to relax, to become liberated. Awareness and acceptance of self will allow students to get rid of complexes and become more confident.

2. "The main and secondary." The exercise is aimed at training students to build their own plans, make a prediction of their actions. Participants write on a sheet the list of their tasks according to priority. Now, they need to imagine themselves in old age, and to evaluate their actions through the prism of their past life. Then, they have to make a new list and compare it to the previous one. This exercise will allow students to build their plans more efficiently.

3. "Who I like and who don't like". Participants are required to write qualities of the two people they like and qualities of the two people they do not like, and then they should compare all the lists. This will allow students to see the connection of their own characteristics with the characteristics that they give to others, from which it follows that every individual can understand the other only within the boundaries of their own self-concept.

4. "Self-esteem of qualities, important for communication". Participants should specify the qualities that are important for communication. After the exercises, the students should evaluate the development of these qualities. This approach will effectively stimulate the self-development of communicative qualities of students.

5. "The benefits of mistakes." The exercise is aimed at developing the ability of students to recognize their own mistakes. Participants are given one minute to think, and then they are offered to tell about their mistakes and how they would behave today. This exercise will enable students to develop critical thinking, learn to analyze their own experience.

6. "Important people". Exercise is aimed at developing the ability to communicate with people, a willingness to work together. Students are given recommendations how to win a man:

- a. Give feedback only when you are asked to.
- b. Speaking about your thoughts and feelings, tell what specific words or acts caused them. Don't talk about the person as a whole (do not say: "You cannot communicate!" it is better to say "You interrupt the interlocutor, you do not listen to him, you do not try to understand his point of view").
- c. Talk so not to offend the other person (do not use offensive words, do not abuse, do not call names, etc.).
- d. Do not give advice. Words, such as "I would rather...", "You should..." are banned. Do not teach — let the person to select himself what to do, he knows better.

These rules will enable students to build not only business relationships in professional practice, but also the relationship of a personal nature.

7. "I don't have to." Participants write three phrases that begin with the words "I don't have to". Then they replace the beginning with "I can." They should consider how they can achieve the tasks, which sort of psychological reward they get for it and what is the punishment in case of not achieving.

Students are required to make regular self-awareness and introspection. The above exercises will help future teacher to acquire the skills, to build professional relationships, to set goals and find the ways to implement them.

### **Emotional intelligence**

The second stage deals with the development of emotional intelligence. Emotional sphere of the person is characterized not only by emotions and feelings, but also by anxiety and self-esteem. A person with low or high self-esteem experiences difficulty in communicating and responding to comments. Therefore, at this stage, it is necessary to develop skills for managing their own emotions and emotions of others during their interactions. To achieve the objectives, the special training was developed, which includes eight lessons by four hours, classes are held two times a week. The training program consists of four training stages:

1. The introduction of the participants, creating of trusting atmosphere, the empowerment of the participants.
2. Group labialization – the deliberate creation of the participants' frustration, related to the increase in motivation of emotional intelligence development. Awareness of the emotional intelligence importance. Developing the ability to understand and differentiate emotional states. Development of sensitivity, empathic empathy.
3. Informative phase (of constructive work). Contains procedures aimed at the formation and consolidation of the main components of emotional intelligence and their implementation in teaching and communicating. The development of empathic observation, empathic hearings in pedagogic activity. The development of self-acceptance, ability of confident behavior. Improving self-regulation skills.
4. Summing up. The final consolidation of acquired skills, the completion of the group work.

At each stage, there is a variety of active learning types: brainstorming exercises, business games and role plays, group discussions, discussing cases etc.

At the end of the training, the student will be emotionally prepared for stressful situations. He/she needs to understand that every human behavior has a rationalization. Many of the fears and desires are of a subconscious nature, but often they motivate us to action. Any action of the person leaves an emotional tone in memory, therefore perception of yourself and your emotions will lead to a deeper analysis of your personality.

### **Practical intelligence**

The practical intelligence, as mentioned above, implies the practical activity, but this does not mean that in dealing with practical tasks you do not need to consider hypotheses and plans of your actions for their most effective solution. The essence of practical thinking is to be able to quickly apply your knowledge for prompt and efficient solution of the problem, based on personal experience.

The teacher practical intelligence is based on professional pedagogical thinking. This thinking is characterized by flexibility, mobility, creativity. The development of these qualities is possible making the theoretical exercises; however, teaching practice will bring greater experience, thanks to real teaching situations. In most cases, the teacher need to make a quick decision (mobility,

efficiency), or to change his/her behavior (show flexibility), or to find a compromise solution (show creativity). The importance of this kind of thinking is obvious; therefore, future teachers need to be aware of the practical intelligence development even before undertaking the pedagogical training. One of the ways to determine the level of the practical intelligence in the future teacher may include the following. On the first day of practice, when the student observes a teacher's lessons, it is necessary to perform a job that validates his/her abilities:

- a) in the classroom, talk about the situation, in which there is another method of teaching activities, offer this method and explain the possibility of replacement (this checks the flexibility of thinking);
- b) determine, whether the lesson consists of interconnected parts (checking the consistency of thinking).

The performance of such tasks will allow each student to see the development degree of their flexibility and consistency of practical pedagogical thinking, and to outline their prospects for development.

In addition, the development of practical intelligence is possible by solving test tasks and their subsequent collective discussion where students can express their point of view, hear the opposite one and find the most faithful solution to the problem. Examples of exercises and tasks to develop practical intelligence of the future teacher:

*I. Imagine that a student during a conversation remains silent whenever you attract him/her to answer.*

Which of the known techniques do you use?

- 1) offer you own clue;
- 2) ask the students to help;
- 3) ask a leading question;
- 4) encourage, express confidence in the abilities of the student;
- 5) demand an answer;
- 6) use support on public opinion ("The whole class is waiting for you!" or "All students want you to answer!", etc.);
- 7) express annoyance, displeasure.

What are the other techniques that you can use in this situation? Explain the result of using the chosen technique. In which case, each of these techniques is appropriate?

*II. Imagine a junior school student taking an apple and starting to eat it during a lesson.*

It is better to: 1) ignore; 2) make a point; 3) use gestures to show that he is doing the wrong thing; 4) approach and make a point without attracting the attention of other children; 5) what else? Justify your actions.

Therefore, the development of non-academic forms of intelligence will allow the future teacher to develop, to choose the best approach to solving each task. The developed technique of group classes will enable the student to know oneself better, to learn how to build relationships with other people and to apply his/her knowledge in practice.

## Discussions

The modern education systems are aimed at information society development, which adversely affects the social, emotional, and practical intelligence of the students (Mayer & Salovey, 1993). As a result, they become closed and emotionally depressed.

There is a close relationship between the considered types of intelligence. Almost all studies of non-academic intelligence forms recognize their connection with thinking in the traditional sense (Sternberg et al., 2002). It gives us the right to say that each of these types of intelligence is a particular kind of thinking. All three considered types of intelligence have correlations with academic intelligence (the cognitive side of the mind), however their main difference is the connection with personal characteristics rather than with academic intelligence, which distinguishes them as separate non-academic forms of intelligence.

The cognitive and a behavioral component is highlighted in the structure of social, emotional, and practical intelligence. However, depending on the type of intelligence, these components have their own specific features: the social is associated with communication, emotional –with senses, the practical – with application of knowledge. All three types are focused on the interaction with reality; therefore, it can be argued that they are social and practical types of intelligence.

Social, emotional and practical intelligences have revealed the determining connections to success, both in academic and in professional activities, as well as the predictive capacity not less than academic intelligence, which gives the opportunity to talk about them as "intelligence leading to professional success."

Non-academic forms of intelligence form a holistic structure consisting of three components: social, emotional, and practical intelligence. Therefore, for full development, you need to consider and develop all forms of non-academic intelligence. The development of non-academic forms of intelligence is a long process, which is divided into several stages.

Thus, the comprehensive development of intelligence (academic and non-academic) leading to the formation of professional competence can be achieved in the classroom with related professional activities.

Developed comprehensive program of non-academic intelligence forms have shown a positive impact on the development of intrapersonal and interpersonal aspects of the studied qualities, suggesting the possibility of its use in the professional preparation of students of pedagogical educational institutions. Thus, the most effective are trainings.

## Conclusion

Social, emotional and practical intelligence are the three components of non-academic forms of learning. A program for self-development of non-academic intelligence forms (social, emotional and practical) in the professional formation of a future teacher is developed. It is recommended to introduce a special optional course "Personal development of non-academic intelligence forms in a future teacher" for students. This work can serve as a basis for the proposed course. The developed program includes trainings, collective exercise that allow us to develop personality, in terms of friendliness and openness. For each individual, non-academic personal development takes different amounts of time, which is directly

connected with the individuality of each person. Each stage of the development of non-academic intelligence forms in a future specialist can be represented using a set of attributes and their expression in terms of development levels of this quality (high, medium, low).

The following studies can be focused on the formulation of the assessment system for non-academic forms of development.

The research materials can be used not only in educational practice of pedagogical universities, but also in other universities to train future professionals.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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