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Professional Reflection of Psychology Students: The Way of Enhancement

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Abstract

The present article concentrates on the way of working out the program of effective intervention of professional reflection in psychology students. Five stages of study are presented. In the first step, in the literature review the designation of professional reflection was defined as a set of structure components: prognostic thinking, reflexivity, positive professional identity and agency. In the second step, in the empirical studies the external and internal factors of professional reflection were selected and examined among a group of professional psychologists (N=54). The analysis of empirical data of professional reflection factors and the level of its formation in psychology professionals made it possible to clearly identify the basic conditions for the intervention program «Professional reflection development» and its effect among psychology students. Only twenty five students (N=25) were self-selected in a 12-week intervention program forming an intervention group (IG). There are four studies of the program: cognitive, personality-related, motivational and emotional-volitional. All of them contain interaction, workshops, webinars, and art-cases. Remaining students (N=28) formed a control group (CG). The results obtained in both student groups and differences between them were further analyzed and explained.

Keywords: *professional reflection, reflection, research-based education, self-identity, agency, educational development*

Introduction

Professional reflection and methods for enhancing it are an important topic in the context of multi-faceted society transformation when a new system of psychological and pedagogical goals and values of professional education is being born. Today, the main task of the educational strategy is preparing students for digital future in today's classrooms, creating conditions for efficient personal and professional growth of a competent professional, having a high level of neural plasticity. These processes put new demands on a person's focusing on skills, requiring stability and self-discipline, ability to be quick in decisions and to predict the ways of personal and professional formation, to demonstrate self-control and ability to correct their own errors. In such conditions, the professional reflection phenomenon is becoming more and more important for educational psychology, professional learning and development. The high level of a person's professional reflection guarantees high quality and safe performance of professional duties at the human factor level, minimizes false steps, and contributes to mental health.

The role of the above phenomenon especially refers to the psychology professional training system, as in intensive life, uncertain socio-political international relations, when the productivity of individual life and self-realization strategies decreases, people require high-quality psychological assistance from skilled professionals. The high skills of professional psychologists require a special learning environment in which professional reflection will be developed as a key competence for a Successful Person 2020.

Research Problem and Focus

When we ask ourselves questions about who we are, what we do, what we did and what we will do, we reflect. Reflection helps us to learn by consciously looking at the past and thinking about our future. In such a way we analyze experiences, actions and feelings in order to learn from them. Researchers in the field of psychological and pedagogical science define the concept of reflection as meta-thinking and self-awareness, a self-regulation process that manifests itself in the continuous reflections on one's own mental states. Dewey (1933–93) defined the concept of reflection as action which is based on the active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it. According to Schön's (1983) interpretation, reflection is a process in which a person tries to deal with his thoughts and make sense of

some puzzling. Moreover, a reflective person could examine his/her practice, come up with ideas and thoughts of how to improve his/her actions and put the result of them into practice. Schön refers to this cycle as appreciation, action, and re-appreciation. This concept is also seen through the prism of self-development and self-identity, which manifests itself in the process of education and professional development (Lyons, K.E., Zelazo, P.D., 2011). Professional development is the process that underlies psychologists' education and training and is intrinsic to professionalism throughout their careers.

Many studies have been conducted on the enhancement of reflective and self-reflective practices among teacher students, but there is poor research into professional reflection of psychology students. Why is it important? For instance, the project team of Cheng M., Barnes G.P., Edwards K., and Valyrakis M. (2015) reported the concept of self-reflection as students' one important skill during their university studies. While examining the research-based education at the University of Helsinki, Katriina Maaranen (2009) focused the first study of her dissertation on the reflection process of graduate teacher students. The students wrote essays as their last assignment before graduating to examine their development as researchers. The results pointed out that the teacher students had analyzed their own development during the process, reflected on theoretical as well as practical educational matters. Ruth Helyer (2015) found that higher level skills such as reflection, self-identity, analysis, critical debate, ability to make connections are associated with higher education study and graduates have always been attractive to employers. The results of the research by Iqbal M.Z., Jumani N.B., and Saeed-ul-Hassan Chishti (2015) revealed that reflections on professional practices supported students to improve their relations with fellow students and colleagues as they got self-aware, were able to understand the knowledge-in-action which enhanced student teachers' skills for delivery of lessons during student internship.

For 7–10 years, there has been a tendency in Ukrainian research papers to study the problem of the formation and development of professional reflection of student teachers, managers, officers, border guards, healthcare providers, civil aviation workers, engineers, etc. (Veremchuk, A., Demskyi, V., Tsybulko, I.). Taking into account the Law of Ukraine "On Higher Education", in particular its Article 26, "Main task of higher education" and the current educational reforms, the psychology of a modern man, the competitiveness criteria in the labor market, it is appropriate to provide insights into the idea of creating new forms of human resources development and innovative methods of academic education (DiGiacomo, G., Chen, PP., 2016). Therefore, further review of the paper will be

dedicated to the study of enhancing psychology students' professional reflection at Borys Grinchenko Kyiv University.

First of all, we think that psychology students' professional reflection means integrated personal entity that conceptually unites prognostic thinking, reflexivity, positive professional identity and agency. The importance of these components for the development of professional reflection is described as follows: prognostic thinking is a determining component of professional reflection, as it ensures proper completion of high grade tasks relating to reception, storage, processing and transmission of information (sensory, perceptual, anticipatory, attentional, mnemonic, imaginative, thinking, perceptive-motor); reflexivity as a personality attribute ensures the functioning of professional reflection, which is manifested through self-analyzing the effectiveness of performance of professional duties, readiness and ability to take right decisions in the situations of deviation from plan; retrospective, perspective and situational analysis of events, conformity and awareness of human life values; positive professional identity status means that the future professional is aware of and accepts the image of "future professional self" and makes him/herself capable of performing the professional duties of a psychologist and acting efficiently in special conditions; agency represents the result of personal integration of the images «reflexive self»-«professional self»-«social self», ensuring the professional's inner mental resistance against negative emotional influences, mental stamina, self-control, resolution and courage.

The analysis of provisions concerning the determination of psychological and pedagogical conditions (Semenov I.N., Stepanov S.Y., Schedrovizkiy G.P., Zak A.Z.) and means of professional reflection development has made it possible to identify the following groups of psychological factors of its development. The first group includes external psychological factors, the essence of which consists in creating the professional-reflexive environment, introducing the elements of integrative (traditional, developmental, personality-oriented type of learning) and special learning with elements of reflection (problem-based situations, creative tasks, individual work, simulated profession-specific events) in the professional training process; creating a favorable climate in academic groups. The second group includes internal psychological factors, such as cognitive, personality-related, motivational and emotional-volitional.

The cognitive factor of professional reflection development includes a set of original thinking and intellectual abilities, power of reasoning and ability to communicate clear verbal messages, sociocultural and personal knowledge and anticipatory ability. The personality-related factor combines personal self-actualization needs, temporal orientation and ability to reproduce here and now reality, sense

of internal support, concept of human nature, features of one's own individuality, and formedness of value orientations. The motivational factor accounts for the role of knowing how to become a professional, wish of professional development and obtaining a high quality professional education, and readiness to perform professional duties. The content-related characteristics of the emotional-volitional factor are the internality of one's locus of control and one's positive self-attitude, definiteness of attitude in the presence of increased risk, prioritizing, self-respect and self-sympathy, sense of one's own responsibility for both good and bad results of one's own activities, and satisfaction with the results of performance of professional duties.

The program of enhancing professional reflection is based on the components and factors which were researched. Its efficiency was confirmed by statistical analysis, in particular, by means of calculation in accordance with the Student's t-test.

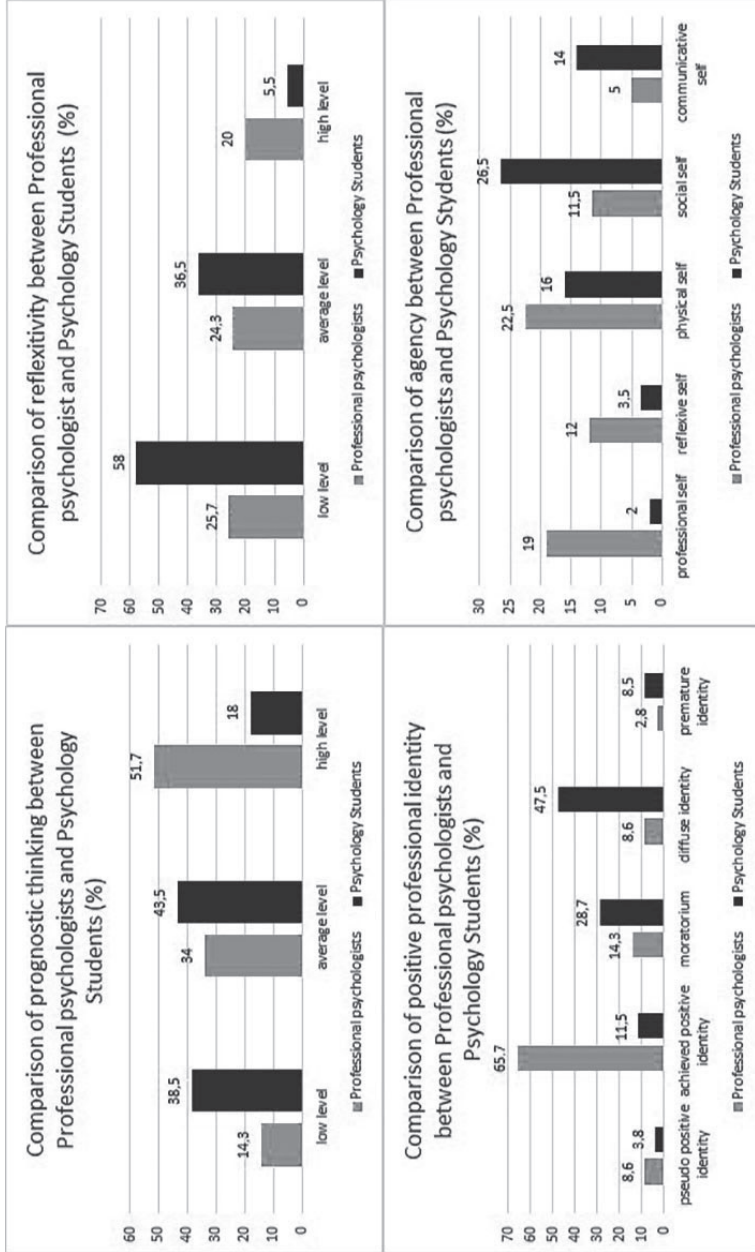
Research Methodology

At the 1st stage of research, we determined the degree to which the contents of professional reflection were formed in the psychology students by components: prognostic thinking, reflexivity, positive professional identity, agency; we studied the conditions for the development of personal qualities. The comparative analysis (Drawing 1) of the results showed a difference between the degrees to which professional reflection is formed in the active and soon-to-be professional psychologists.

At the 2nd stage of the research, we identified the statistical relationships between professional reflection components and indicators of the techniques intended to study the degree of formation of psychological factors. For the purpose of this phase, we used the correlation analysis method with the Spearman correlation coefficient (normal distribution of indicators).

As a result of the 3rd stage of the research, based on multiple regression analysis (MRA), we derived regression relations that show significant contribution of psychological factors in the phenomenon under analysis. Quantitative and qualitative analyses of variance values of dependent variables allowed us to determine the impact of independent variables (Table 1).

Multiple regression analysis (MRA) confirmed that there are significant inter-relationships between the components of professional reflection of psychological professionals and psychological factors of its development, which has become the basis for creating a program «Professional reflection development». It was the 4th stage of the research.



Drawing 1. Comparison of professional reflection components between professional psychologists and psychology students

Table 1. Psychological factors of the professional reflection development of psychological professionals (n = 54)

Professional reflection components (dependent variables)	Psychological factors (independent variables)	R ² – determination coefficient	Independent variables variance
Prognostic thinking	Spatial anticipation (c.f.*)	0.238	23.8%
	Temporal orientation (p.f.*)	0.121	12.1%
	Creativity (p.f. *)	0.097	9.7%
	Temporal anticipation (c.f.*)	0.035	3.5%
	Self-consistency (p.f.*)	0.027	2.7%
	Internality (e.-v.f. *)	0.019	1.9%
Reflexivity	Temporal orientation (p.f. *)	0.396	39.6%
	Internal support (p.f.*)	0.123	12.3%
	Concept of human nature (p.f.*)	0.078	7.8%
	Value orientations (p.f. *)	0.058	5.8%
	Aggression acceptance (p.f. *)	0.054	5.4%
	Behavioral flexion (p.f.*)	0.043	4.3%
	Age	0.023	2.3%
	Self-reproach (e.-v.f.*)	0.019	1.9%
Positive professional identity	Self-concepts interrelationship	0.396	39.6%
	Achievement internality (e.-v.f.*)	0.129	12.9%
	Internal individual motives (m.f.*)	0.114	11.4%
	Vocational motivation (m.f.*)	0.097	9.7%
	External positive motives (m.f.*)	0.053	5.3%
Agency	Self-sympathy (e.-v.f. *)	0.123	12.3%
	Self-respect (e.-v.f. *)	0.104	10.4%
	Internality (e.-v.f. *)	0.082	8.2%
	Self-direction (e.-v.f. *)	0.057	5.7%
	External individual motives (m.f.*)	0.050	5%
	Work relations internality (e.-v.f.*)	0.047	4.7%

NOTE: c.f.* – cognitive factor; p.f.* – personality-related factor; m.f.* – motivation factor; e.-v.f.* – emotional-volitional factor

At the 5th stage of the research, we implemented this program among the intervention group (N=28), after comparing its effectiveness in the control group (Table 2).

Table 2. Comparison of data concerning structural components of professional reflection in the intervention group (IG) and control group (CG) before and after the formation experiment

Structural components of professional reflection under study	Mean values						
	IG students (n=25)			CG students (n=28)			
	Before	After	Student's t-test value	First testing	Follow-up testing	Student's t-test value	
Prognostic thinking	0.44	0.61	0.037	0.43	0.44	0.078	
Reflexivity	3.9	6.5	0.017	3.9	3.9	0.114	
Positive professional identity	2.1	3.4	0.025	2.3	2.5	0.256	
Subject-ness	«Social self»	2.9	3.9	0.05	2.9	3.1	0.061
	«Reflexive self»	6.1	7.5	0.023	6.0	6.0	0.195
	«Professional self»	0.4	2.2	0.015	0.4	0.73	0.168

NOTE. Difference is relevant ($p \leq 0.01$; $p \leq 0.05$).

Research Results

The research involved 107 persons including 53 psychology students of the Institute of Humanities at Borys Grinchenko Kyiv University and 54 professionals from psychology services. The 12-weeks intervention program was based on the creative tasks focused on the participants' self-reflection of their self-images. Only twenty five students wished to be participants in the intervention group by themselves.

The analysis of results in Table 1 and Table 2 made it possible to make the following conclusions and form the main cases for the program studies. A cognitive study is based on the fact that prognostic thinking of psychological professionals has certain relationships with such ranges as temporal orientation, creativity ($p < 0.000$), self-consistency ($p < 0.009$), anticipatory ability, and spatial anticipation ($p < 0.00$). The most influential factor of the psychological professional's prognostic thinking development is spatial anticipation (23.8%), followed by temporal orientation (12.1%), creativity level (9.7%), temporal anticipation (3.5%), self-consistency (2.7%) and internality (1.9%).

A personality-related study contains a reflexivity correlative relationship with the following parameters: age ($p < 0.05$), internal support ($p < 0.000$), behavioral flexion ($p < 0.047$), aggression acceptance ($p < 0.023$), and self-reproach ($p < 0.05$). Psychological factors of the development of students' reflexivity are: temporal orientation ability (20.3%), feeling of internal support (12.3%), concept of human nature (7.8%), value orientations (5.8%), cognitive activity (5.4%), behavioral flexion and creativity (4.3 %), age (2.3%), and self-reproach level (1.9%).

A motivational study is based on positive professional identity, which is associated with social self ($p < 0.10$), professional self ($p < 0.03$), reflexive self ($p < 0.019$), vocational motivation ($p < 0.009$) and learning motivation ($p < 0.047$), internal individual motives ($p < 0.000$), and external positive motives ($p < 0.006$). 36% of positive professional identity is dependent on the awareness of "professional self", 12.9% on achievement internality, 11.4% on the internal individual motives, 9.7% on vocational motivation, 6.5% on the formation degree of "professional self" and 5.3% on the external positive motives.

Emotional-volitional study. Agency is associated with such parameters as self-sympathy ($p < 0.000$), self-respect ($p < 0.000$), self-perception ($p < 0.012$), self-esteem ($p < 0.023$), internal individual motives ($p < 0.023$), learning motivation ($p < 0.010$), vocational motivation ($p < 0.003$), work relations internality ($p < 0.019$), health ($p < 0.005$) and failures ($p < 0.047$). The development of agency is influenced by self-sympathy (12.3%), self-consistency (2.7%), self-respect (10.4%), interpersonal and work relationships internality (8.2%), self-direction ability (5.7%), external individual motives (5%), and internal locus of control in work relationships (4.7%). Based on the systematization and synthesis of theoretical and empirical research, the meaning of the term 'professional reflection' has been determined.

The first two weeks of the program were focused on a discussion on what reflection and professional reflection is, why it is a necessary skill for psychology students. Viewing films relevant for the subject matter of the meeting developed in the students the process of self-identification with the protagonists who were psychologists; the group discussion focused on launching the reflection mechanisms ("what are the main character's positive and negative aspects?", "what is his strategy of behavior with clients?" "what would you do if you were the main character?"). The contests and home tasks contributed to the students' independence and responsibility for the outcome. Informative lectures-discussions, cases, webinars, workshops with professional psychologists, visits to psychological service agencies were aimed at the students' general understanding of the state of modern psychology, employment conditions and prospects for professional growth. Such a set of student engagement techniques will influence the formation

of professional self-image, awareness of the specific aspects of the chosen profession, and information awareness in general.

The next 3–8 weeks of the program were focused on the development of cognitive, personality-related, motivational and emotional-volitional factors of professional reflection. The main specificity consists in the formation and development of psychological factors that influence the development of professional reflection. For instance, exercises like “Brainstorming”, “Island”, “Future Self Portrait”, “Tree of my Needs” are focused on the students’ analysis of their own choice of profession, and their readiness for learning and mastering the professional skills.

The following 9–10 weeks of the program involved the formation of the reflexive attitude towards the learning process and future professional activity. The first two stages resulted in the participants’ being aware of their personal choices, having evaluated the role of personality in the professional growth process, having compared their self-image with images of themselves as future psychologists, received necessary information on the professional growth opportunities. The main techniques of the Program at the third stage were training, lectures-discussions, and tasks for independent work. The creation of “Psychologist’s professional achievements” Portfolio became an efficient method of self-development and self-improvement.

The last weeks (11–12) were dedicated to the finalization of the program, summing up, reflexive analysis of the program stages and follow-up testing of the structural components of professional reflection.

Discussion and conclusions

Analysis of the data of the content of professional reflection and its formedness level in the professional psychologists allowed for identifying clearly the prerequisites for the development and validation of professional reflection development program. The theoretical basis for the program development were the researchers’ views on the methods and forms of reflection, reflexivity and self-reflection development.

As can be seen in Table 1, the study of prognostic thinking among the psychological professionals revealed 51.7% with high levels, while the students showed 18%; a high level of reflexivity is characteristic of 20% of the professionals, but only for 5.5% of the students. In 65.7% of the professional psychologists positive professional identity prevails, whereas only 11.5% of the psychology students achieved positive professional identity. During the study of agency, it was found that

«professional self» in the future professionals accounts for the smallest percentage (2%), «reflexive self» – 30% and «social self» – 26.5%. The active professionals showed the following results for the same indicators: «reflexive self» – 35%, «professional self» – 15%; «social self» – 11.5%. Quantitative and qualitative analysis of the results obtained from the application of the techniques aimed at the study of psychological factors also showed differences in their development among the respondents.

Based on the results of follow-up testing and comparing the states of development of professional reflection, as well as the level of psychological factors for its growth, before and after the experiment, it was found that the psychology students who participated in the formation experiment ($n=25$) increased the values of the structural components of professional reflection $p \leq 0.05$ (Table 3). The students in the control group (CG) ($n=28$) did not show any significant changes in the structure of professional reflection. Based on the analysis of changes in the values of structural components of the future professionals' professional reflection, it was found that in the intervention group the Student's *t*-test values were at the statistically significant level, after the formation experiment, the mean value of the student's prognostic thinking increased up to 0.61 (before – 0.44; $p \leq 0.037$); reflexivity up to 6.5 (before – 3.9; $p \leq 0.017$). A transition of the students can be observed from standstill and diffused professional identity status to positive professional identity (before – 2.1, after – 3.4; $p \leq 0.025$); the difference becomes smaller between the levels of development of real and perfect professional self-images (before – 3.1, after – 2.4; $p \leq 0.05$), meaning that the level of professional reflection has increased; the agency level in respect of main activity has also improved: in particular, in the structure of personality-related identity the images of «social self» (before – 2.9, after – 3.9; $p \leq 0,05$); reflexive self (before – 6.1, after – 7.5; $p \leq 0.037$), professional self (before – 0.4; after – 2.2; $p \leq 0.037$) have become more important. The same parameters in the control group students did not show a significant difference during follow-up testing ($p \geq 0.05$), as against the intervention group students before and after the experiment, which is also confirmed with statistical significance ($p \leq 0.05$).

The results of the study were presented at the methodological seminar for faculty members of the Institute of Humanities, Borys Grinchenko Kyiv University. The participants noted that it would be rather useful to find more factors of enhancing professional reflection and make the program longer and more extensive (during the semester).

The experimental proof of the efficiency of the developed program, as well as statistically significant improvement of structural components of the students'

professional reflection, point out the possibility and the necessity of introduction of the professional reflection development program in the educational and development process of psychology students.

In the perspective of the study, we are working out the tools “Professional reflection” for all students of Borys Grinchenko Kyiv University.

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