



The Influence Of The Author's Knowledge Assessment Method "Intellectual Duel" On The Formation Of The Professional Competence Of Future Coaches

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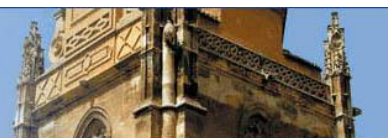
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ABSTRACT

The purpose of the study is to determine the degree of influence of the author's knowledge assessment method "intellectual duel" on the formation of professional competence of future trainers. Students of the control group (n = 162) and the experimental group (n = 165) took part in the experimental work. The duration of experimental work was 8 months. After the introduction of the author's knowledge assessment method "intellectual duel", the level of formation of the professional competence of prospective trainers increased significantly in the experimental group compared to the control group. Using the Pearson test χ^2 confirmed the differences between the control and experimental groups as statistically significant ($p < 0.001$) in favor of the experimental group. The implementation of the author's knowledge assessment method "intellectual duel" confirmed its effectiveness in terms of increasing the level of professional competence of future trainers by all indicators.

Keywords: education, professional competence, knowledge assessment method, future trainers, students.

INTRODUCTION

The problem of improving the process of training highly qualified specialists is still relevant. An equally urgent problem is the process of improving the training of future coaches. This is evidenced by a number of modern studies, in particular scientists E. Sucuoglu and H. Atamturk researching the problem of training future coaches, they emphasize the presence of a positive correlation between the professional qualifications of coaches and the attitude of their students to physical education classes. (Sucuoglu & Atamturk, 2020). Other scientists (Syed Zia-Ul-Islam, Salahuddin Khan, Alamgir Khan, Samiullah Khan) also note that the lack of well-trained coaches has a very negative effect on the sports performance of athletes (Syed Zia-Ul-Islam, Salahuddin Khan et al, 2019).

Stoyanov emphasizes the need for radical changes in the system of professional training of future specialists in the field of physical education and sports. According to the scientist, high demands are currently placed on such specialists, their personality and professional sports skills. It is the practical readiness of a graduate of a higher educational institution to fulfill his professional purpose that is an integrating indicator of a quality system of training specialists in higher education. In particular, the scientist emphasizes the fact that in recent years, in pedagogical practice, the direction of development and testing of methods and tools, the basis of which are modern innovative technologies - the introduction of new things into the pedagogical process, can be clearly traced (Stoyanov, 2019). Similar thought Yuriy M. Kozlovskiy, L. Ortynskiy, Mykhailo V. Pashechko. Scientists also note that modern training of future specialists should be based on a critical approach to their professional training. This, in turn, allows you to prepare well for your future professional life (Kozlovskiy, Volodymyr, et al, 2019). Humenyuk also emphasizes the need for new requirements for the professional competence of future specialists in physical education and sports, as well as the importance of introducing innovative technologies (Humenyuk, 2015). Stepanchenko, Dzhurynskiy, Akhmetov emphasize the need to modernize the training of future specialists in physical education and sports using the latest technologies, methods, and educational innovations (Dzhurynskiy, 2016; Stepanchenko, 2017; Akhmetov, 2019). In addition,

Akhmetov emphasizes that this process should take place through the narrowness of the principles of humanization of education, a person-oriented approach, as well as by improving the content and forms of organization of the relevant process (Akhmetov, 2019). At the same time, Dzhurynskyi notes the importance of the formation of a high level of health of the relevant specialists (Dzhurynskyi, 2016). However, individual authors (Prystynskyi, Babych et al, 2020) emphasize the insufficient orientation of the professional training of specialists in the field of physical education and sports in the context of non-standard approaches to the organization of the educational and training process with their pupils (Prystynskyi, 2020; Babych, 2022). At the same time, in our opinion, in order to increase the level of professional competence of future trainers, it is necessary not to limit oneself to the introduction of new (innovative) educational disciplines in the process of teaching, but also to use other opportunities. Among such possibilities, in our opinion, is the assessment of students' knowledge both in relation to a specific topic and in the context of awareness of the subject as a whole. Considering the above, we considered it necessary to develop a non-standard knowledge assessment method, the use of which would contribute to increasing the level of formation of the professional competence of future coaches and preserving their mental health, reducing the stress factor that often occurs with standard methods of assessing students' knowledge.

The aim of the study: determine the degree of influence of the author's knowledge assessment method "intellectual duel" on the formation of professional competence of future trainers.

MATERIALS AND METHODS

To determine the influence of the author's knowledge assessment method "intellectual duel" on the formation of professional competence of future trainers, a set of diagnostic methods was used (with the help of which it is possible to establish the presence of positive changes or their absence in relation to the level of professional competence of future trainers) at a specific stage of student education. Thus, the level of formation of professional competence of future coaches was determined by the following indicators: critical thinking; motivation for success; the ability to take reasonable and justified risks. Given the complexity of this phenomenon, we used a set of diagnostic methods, in particular, to determine (in dynamics) the level of critical thinking, the test "Critical thinking (L. Starkey)". The degree of motivation for success was determined using the personality diagnosis method for motivation for success. The level of ability to take reasonable and justified risks of future coaches was determined using the test "Ability to take risks. The choice of the above-mentioned diagnostic methods is due to the fact that in almost every specialization (future trainers) both critical thinking and motivation for success are necessary to achieve a high level of professional competence (motivation for achievements in the professional sphere of future trainers), and also the ability to take risks in order to achieve success in future professional activities. Also, with the help of testing, the level of theoretical knowledge of students was determined for each separate educational component (mainly theoretical direction).

To compare the frequency distributions of the experimental and control groups of future teachers at the first (initial) and second and third stages of the experimental work, we used the Pearson test χ^2 , which allows you to compare two empirical distributions and conclude whether they agree with each other.

Pearson's criterion χ^2 is calculated by the formula:

$$\chi^2 = \sum_{i=1}^k \sum_{j=1}^l \frac{(N_{ij} - N_{ij}^0)^2}{N_{ij}^0}$$

Organization of the experiment

Students of the control group (162 people) students of the experimental group (165 people) took part in the experimental work). In the experimental group, the author's knowledge assessment method "intellectual duel" was implemented. In the control group, knowledge assessment was carried out according to the traditional system. The application of the author's knowledge assessment method took place in the second year of training of future trainers. The duration of experimental work was 8 months. The experiment was carried out in three stages. At the first stage (before the introduction of the author's evaluation method into the practice of training future trainers), the entry level of students' critical thinking, motivation for success, and the ability to take risks was determined (in the control and experimental groups). At the second and third stages, the author's knowledge assessment method "intellectual duel" was implemented within the limits of individual educational components (educational disciplines), and there was also a current determination of the level of formation of professional competence of future specialists according to established indicators (level of critical thinking; level of motivation for student success; ability of future specialists to take reasonable and justified risks), and also with the help of an expert assessment (from the faculty of higher education institutions), which mainly determined the level of theoretical knowledge and practical skills for each individual light component (theoretical direction), which was studied during the implementation of the method.

The presented method of knowledge assessment is singled out by us as independent, although in a certain way it can be considered a modernization of the "Synon method". Its essence is to reveal the emotional stability of a student who is confused in front of other students and must answer provocative questions, "hitting" on his most painful places, while maintaining emotional balance, which, in a certain way, can indicate the student's readiness to interact with people in the role of the head of the labor team or its member (Turkot, 2019; Volkova, 2020).

The difference between the "intellectual duel" type of evaluation and the synon method is that it, firstly, it does not involve the emotional testing of an individual student as it happens according to the requirements of the synon method, secondly, in this case, equal conditions are created for students in which they find themselves, thirdly, the main focus of assessment is on consolidating previously acquired knowledge due to the maximum activation of students in unusual conditions, fourthly, the proposed approach to assessment also involves team actions (i.e. feeling the shoulder), and not the other way around, which is suggested by the synon method (where all students step on each other).

We used this type of assessment in two options (I option – simplified, II option – complicated), which are carried out in a game form, starting with the simplified option.

The conditions for applying the evaluation method (according to option I) are as follows. After dividing students into two teams, students delegate one team representative from each team, who will take part in an intellectual duel with their "wee for wee". The specified evaluation method can be usefully applied within any educational component (educational discipline), preferably after studying the course, when students received a significant amount of information from the specified educational component. It is important to note that all students participate in the class in turn. Students who participated in an "intellectual duel" sit down in front of each other on a chair (or, if it's possible, stand behind the chairs (rostrums)). Each of the duelists in turn asks each other questions according to the material that was offered to the students during the study of the entire course (both in lectures and seminars, and in accordance with the material that was to be mastered by students on their own). Each answer to the question is evaluated on a ten-point scale by specially selected experts (that is, by the best students and the teacher, the total number of which should be at least three people, while the teacher only makes sure that when assigning points there is no superiority towards each individual student who gives an answer). The task of each student is to ask a question that his "wee for wee" could not answer, or give an incorrect (or incomplete) answer and score as few points as possible. Thus, each of the duelists asks each other three or more questions in turn (depending on how much time is allocated by the teacher).

In order for the other representatives of both teams to immerse themselves more deeply in the lesson, each of the duelists is given the right to one hint from the representatives of his team. But such a hint should be provided only by the student who was chosen by random drawing. For example, all team representatives choose a serial number from one to..., depending on how many students are in the team. Thus, a duelist who needs help chooses a sheet with a number in a special basket (bag, etc.) with his eyes closed. Accordingly, the duelist can be given a hint only by a student (representative of his team), who, according to the pre-selected number, corresponds to the number drawn by the duelist from the basket. This approach requires commitment (readiness) from everyone, including students, because a student, not having the material, can let the entire team down. It is in connection with the above that the teacher announces to the students in advance about the assessment of knowledge in this form, which, in turn, arouses a sense of responsibility even among those students who were not distinguished by a high desire for learning.

It is important to note that the student who provides assistance is also evaluated by experts, only the maximum number of points in this case is no more than seven points. Alternatively, with the permission of the teacher, if the student cannot provide assistance to a duelist from his team, he is allowed to use notes or educational and methodological support (book, textbook, dictionary, etc). But, firstly, it must happen in an extremely small period of time (for example, 30-45 seconds), secondly, such a hint is evaluated from the maximum - 4 points.

This is necessary in order for not only excellent students to fully immerse themselves in the process, but also all students, without exception, on the basis of understanding, that it is from them that the victory of their team, which must necessarily be awarded with grades, can largely depend on them.

Evaluation of the activities of future specialists is extremely important. In this regard, taking into account the modular system, according to which the total number of points (100 points) is acquired by the student through ongoing verification of theoretical knowledge and practical skills, modular works and independent (in some cases, research work) work. In our case, we offered students a bonus of 15% for second place (which, according to the total number of points, was intended for the assessment of students' knowledge). And up to 25% for 1st place in the duel. Such an incentive plays an extremely important role, as it increases interest, direction to victory.

The second option of our proposed evaluation method is somewhat more complicated and requires students to think strategically (which we applied within the third stage of the experiment). According to the terms of its holding, there is a "bank" in the amount of 200 points. Before voicing the question itself (we will conditionally designate the participants of the duel: "duelist - I" and "duelist - II"), "duelist I" begins the bidding with his "wee

for wee". The essence of the bidding is as follows: for example, "duelist I" begins with the words "I bet 10 points that my "wee for wee" will not give a complete answer (or will not be able to answer at all) to the question posed by me". At the same time, it is important to note, that the cost of the bet can be determined individually depending on how difficult the proposed question is. At that time, "duelist II", even before duelist I announces the question to him, must accept or not accept the bet. If "duelist II" accepts the bet and provides an answer to the question, the bet is doubled (that is, 20 points, which go to the "duelist II" team). If "duelist II" does not accept the proposed bet, his team automatically loses half of the bet made without hearing the question (that is, if the original bet was 10 points, then, accordingly, the "duelist" team that refused to answer loses 5 points). In the event that the bet is accepted, but there is no answer to the question or it is incomplete, depending on what the "duelist I" bet was made on, his team receives 10 points, and also get the right to the next question, since, according to the second variant of the method proposed by us, the right to question the "duelist" of the opposing team is obtained in the case of providing an answer to the question posed by his "wee for wee".

Since, in accordance with the specified rules of student evaluation according to the author's method, it is strategically beneficial to be the first to ask questions, at the beginning of the auction, the representative of the team that, for example, will be the first to answer any question posed by the teacher in accordance with the previously received material from the studied educational component, begins to ask questions.

As in the previous case, while the participants engage in an intellectual duel, other team representatives also have the opportunity to take active actions.

So, if one of the "duelists" does not answer the question posed to him, any of the representatives of his team can double the bet (with the consent of the "duelist" who proposed the question) and give an answer to him. If the team representative answers correctly, the doubled bet can be transferred to the personal account of the team representative (team reserve), which he can use at the right time. If the representative of the team answers incorrectly, the "duelist" who proposed the question must double the bet (which will be already 40 points) and answer the question he asked himself. This is mandatory! If the answer is inaccurate or incorrect at all, all points go to the opposite team.

This, in turn, can serve as a restraining factor for a duelist who wants to be the first to ask the most difficult question, and cannot answer it correctly and fully himself, because in that case his entire team could lose four times as much as the original bet.

As you can see, the second option of the evaluation method proposed by us is somewhat more complicated and requires, firstly, a good preparation of the teacher himself (the ability to clearly explain the rules); secondly, the maximum inclusion in the students' classes, since it is necessary not only to think about what questions to ask the opponent, but also to carefully consider whether he will be able to answer the question himself and not lose the points that belong to the whole team.

THE RESULTS

During the first stage of the experimental work, when comparing the control and experimental groups at the ascertainment stage (initial level) according to all the indicators of the professional competence of future coaches determined by us (critical thinking; motivation for success; ability to take risks) the empirical value of the criterion is established χ^2_{emp} is less critical 5,99. Thus, the differences between the distributions of the control and experimental groups before the introduction of the author's assessment method were found to be insignificant ($p > 0,05$).

At the second stage of the implementation of the author's evaluation method in the practice of training future specialists, it was established, that in the experimental group the number of students who experienced changes in the development of critical thinking (at a high level) increased by 3,7 %. In the control group, an increase in the number of future specialists with a high level of critical thinking was recorded on 2,3 %, which is almost half as much as in the experimental group. Similar differences between the control and experimental groups were recorded according to the second indicator - motivation to succeed. If in the control group the number of future coaches with a high level of motivation for success increased by 3,1 %, then in the experimental group the number of students with a high level of motivation for success increased by 5,1 %. Certain positive changes were also established in relation to the third indicator of professional competence of future coaches - "ability to take risks". In this case, the positive changes in both groups were smaller than in the previous two indicators. Meanwhile, more noticeable changes occurred in the experimental group. The number of students in the experimental group capable of reasonable risk increased by 3,2% at the end of the second stage of the experiment. In the control group, the number of such students increased by 1,8 %.

For convenience, we will present the results obtained at the 2nd (current) stage of experimental work using a diagram (in Fig. 1).

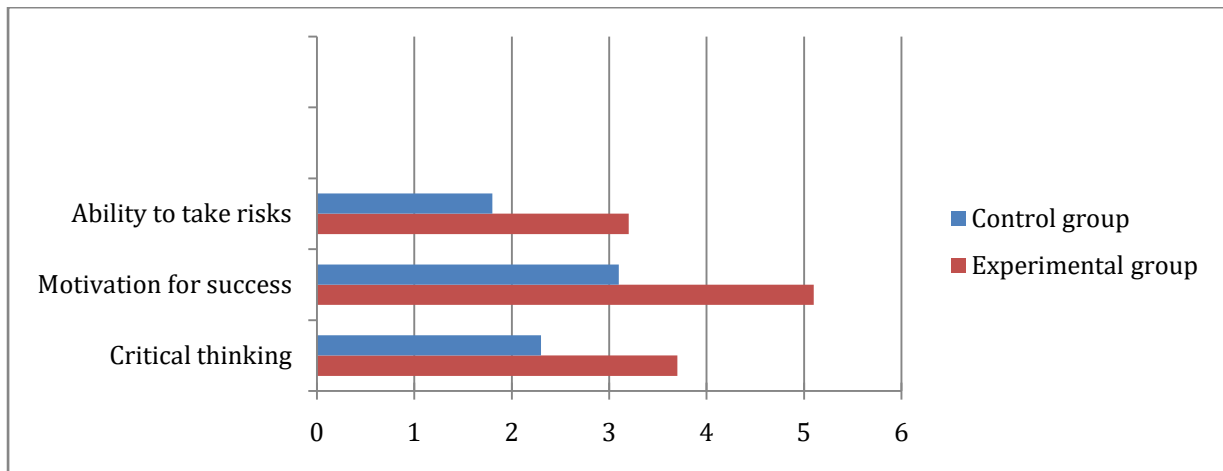


Fig.1: The dynamics of the level of formation of the professional competence of prospective coaches at the 2nd stage of experimental work

It is clearly visible from the diagram that the biggest differences between the control and experimental groups (in favor of the experimental group) were recorded in relation to the indicator – the ability to take risks. Noticeable differences in favor of the experimental group were also established by other indicators - "motivation to succeed" and "critical thinking".

At the third stage of implementation of the author's knowledge assessment method "intellectual duel", the following results were established. According to the first indicator of professional competence of future coaches "critical thinking" was established an increase in the number of students of the experimental group with a high level of critical thinking by 7,1% . In the control group, an increase in the number of future coaches with a high level of critical thinking was recorded at 4,5 % . Regarding the second indicator "motivation to succeed", the following results were found: in the control group, the number of future coaches with a high level of motivation for success increased by 5,8 %; in the experimental group, the number of future coaches with a high level of motivation for success increased by 9,3%. Even greater differences in favor of the experimental group were recorded in relation to the third indicator of the professional competence of future coaches. Thus, if in the control group the increase in the number of students with the ability to take reasonable and justified risks increased by 2,3 %, then in the experimental group the number of such students increased by 7.5%, i.e. almost three times compared to the control group. The results obtained at the 3rd (final) stage of experimental work are presented in Fig. 2.

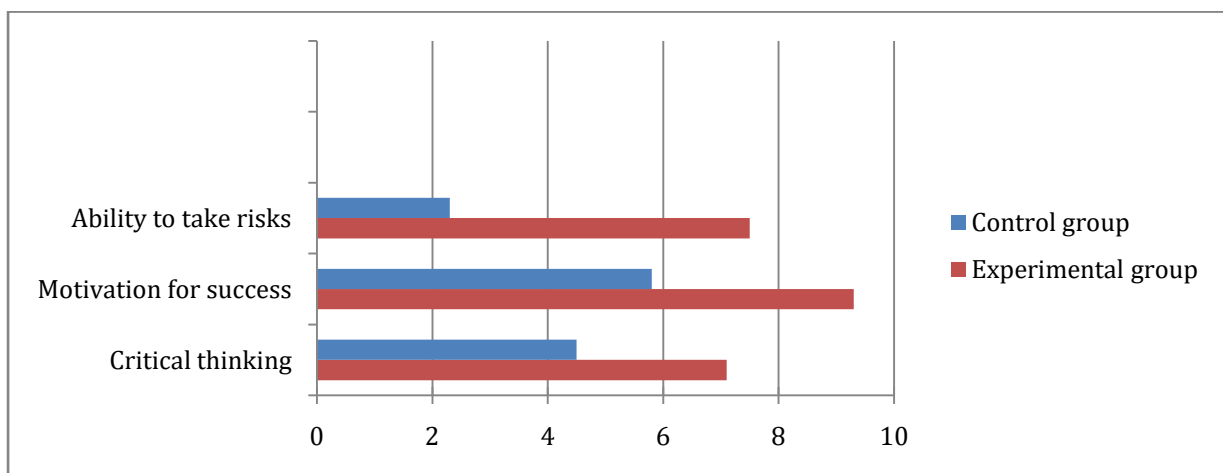


Fig.2: The dynamics of the level of formation of the professional competence of future coaches at the 3rd (final) stage of experimental work

Using the table (Table 1), you can also see the advantages of the experimental group compared to the control group in terms of dynamics regarding the level of formation of the professional competence of future trainers at the 2nd and 3rd stages of the implementation of the author's evaluation method.

Table 1. Dynamics of changes in the level of professional competence of future trainers during experimental work

Stages of experimental work	Indicators of professional competence of future coaches			
	Control and experimental group	Critical thinking	Motivation for success	Ability to take risks
2 stage	Control group (%)	2,3	3,1	1,8
	Experimental group (%)	3,7	5,1	3,2
	The empirical value of the Pearson χ^2 test when comparing the control and experimental groups	p<0,001	p<0,001	p<0,001
3 stage	Control group (%)	4,5	5,8	2,3
	Experimental group (%)	7,1	9,3	7,5
	The empirical value of the Pearson χ^2 test when comparing the control and experimental groups	p<0,001	p<0,001	p<0,001

The table also shows that the differences in the second and third stages of the implementation of the author's evaluation method when comparing the control and experimental groups are established as statistically significant. The empirical value of the Pearson test χ^2 p<0,001. It was also established that both at the second and third stages of the experimental work, the advantage of the experimental group was preserved compared to the control group with a slight increase in differences (in favor of the experimental group). Meanwhile, at the third stage of implementation of the author's knowledge assessment method, a further increase in disagreements regarding all indicators of professional competence of future trainers was recorded (in favor of the experimental group). Especially regarding the third indicator of professional competence of future coaches.

DISCUSSION.

The analysis of scientific literary sources proves that the problem of approbation of author's teaching methods in general and non-standard methods of evaluating future trainers in particular is almost not covered in scientific literature. Only in some cases are there scientific publications devoted to the description of the author's teaching methods in higher education (Babich, 2015). This makes it somewhat difficult to discuss our research. At the same time, we found a number of scientific works that are somehow correlated with our research. So, Medina, Ramon, in their study, which is devoted to the formation of professional competence of future specialists, came to a conclusion, that in order to improve the level of education, it is necessary to attract new tools for the development of certain professional skills (Medina & Rosselló, 2019). Other scientists Genutė Gedvilienė, Vidmantas Tūtlys, Sigita Daukila also emphasize the need to introduce modern educational technologies to improve the quality of the educational process (Genutė Gedvilienė et al, 2019). When developing the author's method of evaluating the knowledge of future coaches, we also relied on the scientific work of Stoyanov, who notes that innovative activity is the basis for improving the educational process, the essence of which is the introduction of modern means and methods into the traditional education system (Stoyanov, 2019). We believe that this opinion correlates with our research, because the author's method of knowledge assessment was developed and put into practice by us, aimed at increasing the level of professional competence of future trainers through a new, non-standard approach to the organization of students (when assessing knowledge) at any stage of studying a particular educational subject (educational component). In turn, non-standard, innovative approaches involved in the educational process (including in relation to knowledge assessment), encourage the students themselves to search for and apply innovative approaches in their future professional activities. This is emphasized by Stanisław Juszczak and Snježana Dubovicki. They note that in order to successfully perform the teaching profession, it is necessary not only to possess traditional didactic methods and competencies (Stanisław Juszczak, 2015; Snježana Dubovicki, 2015).

Other scientists (A. Žakelj, M.Cotič) researching effective models of supporting students with learning difficulties found that it is new methodological approaches to teaching and learning that help to eliminate existing difficulties. This conclusion of the scientists correlates with the results of our research. Since we found that our proposed non-standard approach to assessing students' knowledge has a particularly positive effect on students who usually had significant difficulties with traditional student surveys. Which is mainly related to both the type of temperament of students (mainly melancholic) and the presence of psychological traumas associated with studying and taking exams at school.

When developing the author's method of evaluating the knowledge of future trainers, we also took into account the scientific works of N. D. Koletvinova, R. D. Flores, who investigated the problem of developing a system for evaluating students' competence training (Koletvinova & Flores, 2015); Stepanchenko, who emphasized the importance of an innovative approach through the technologies of active, developmental, problem-based, project-based and contextual learning (Stepanchenko, 2017); M.Lipnická, S.Babiaková, M.Cabanová, who studied the influence of self-assessment of future teachers on their competence (Lipnická et al, 2019).

Concluding the discussion of the research conducted by us, we also note that the method we developed for evaluating the knowledge of future coaches has both positive and negative aspects. The negative sides of the second version of the author's assessment method "intellectual duel" include: loss of time for students to consider the strategy of their questions, rather high responsibility to the representatives of his team, which ultimately can affect rapid fatigue and nervous and emotional excitement (overstrain).

CONCLUSIONS.

Implementation of the author's knowledge assessment method "intellectual duel" in the process of professional training of future trainers witnessed a noticeable increase in the level of formation of professional competence of future students (by all indicators: critical thinking; motivation for success; ability to take reasonable and justified risk) compared to the results in the control group. Using the Pearson test χ^2 confirmed the differences between the control and experimental groups as statistically significant ($p < 0,001$) in favor of the experimental group.

It has been established that the application of the author's knowledge assessment method "intellectual duel" in the practice of professional training of future trainers also has a positive effect on students', firstly, the minimally necessary experience of socially strategic thinking, secondly, the development of future coaches' responsibility for their own knowledge and actions (the presence of diligence in the context of preparation for classes), thirdly, the feeling of the team and the development of the interaction of its representatives, fourthly, the inclusion of all students without exception in the work, fifthly, the further formation of motivation for better education of students with the presence of psychological traumas related to the assessment of knowledge, as well as the reduction of the stress factor for such students and students with the melancholic temperament type.

A comparison of the research results of the second and third stages of the experimental work made it possible to establish a stable positive dynamic regarding the superiority of the experimental group compared to the control group, respectively, in all indicators (critical thinking; motivation for success; ability to take reasonable and justified risk) of professional competence of future coaches (with a moderate increase in differences between control and experimental groups). Thus, the application of the first (simplified) and second (complicated) options for applying the knowledge assessment method "intellectual duel" are equally effective in the context of forming the professional competence of future trainers.

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