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The definition of the term "Inquiry-based instruction"

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The article reacts on the current needs based not only in the educational practice and pedagogical theory, but also in the requirements of the society. These requirements focus on the pupils' competences that have to be able to think rationally, to deal with the new situations, and to solve problem situations. Conceptually, this paper concentrates on the issues related to the terminology, which are arising mainly from the pedagogical theory that is nowadays limited by an unsatisfactory degree of completion in the field that is aimed on the inquiry-based instruction. With the application of the inquiry-based instruction (not only in Czech Republic) closely related to the development of the pedagogical theory, there emerged a problem of the terminological basis. The inquiry-based instruction is neither well-known nor understood what the term itself means. Therefore, this paper focuses on the resolution of a comparatively well-defined area of the pedagogical reality which, however, has a broader context when discussing other related scientific fields – psychology, philosophy, and technology. The outcome of this article is to specify the term inquiry-based instruction from the various points of view in a form of a definition that characterizes the basic elements contained in it.

Key Words: inquiry-based instruction, terminology, term, definition, specification

INTRODUCTION

The article is based on the internationally growing tendencies that manifest themselves in the application of the inquiry-based instruction in the educational fields. The effort is therefore followed in order to develop the creative thinking of pupils at the expense of a drill and memorizing. Furthermore, it also develops the skills to solve unknown situations that a pupil will face later in his/her life. Both areas of development intersect in the competence of the problem solving, which is very often seen as a non-linked to the separate subject areas, as an superordinate competence, however, also as a competence that is being applied in concrete activities. The significance of the competence development was also noticed by Lesh and Zawojewski (2007) who state that a highly-developed problem-solving skill facilitates further education and successful integration into the society, but it is also necessary for a lot of personal activities. Very often in their life, people have to apply the knowledge, which they have learnt, in new situations, and to do that, they need to control their basic thinking and other general

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cognitive skills which create the essence of the individual competence for the problem solving.

It is possible to notice the terms "inquiry-based instruction" and "problem" already in the first paragraph. Those are obviously related to each other, however, the connection between them is yet to be defined, and therefore it is not obvious, how close their connection is. In the pedagogical theorym it is very common to read terms i.a. problem-posing education and heuristic method (Du and Kirkebæk, 2012; Torp and Sage, 2002; Boud and Feletti, 1997), method of practical works (Šimoník, 2005), exploring method (Horák et al., 1992), example-based education (Gog and Rummel, 2010; Renkl et al., 2009), transformative learning (O'Sullivan, 1999; King, 2005; Taylor, 2006), experience learning, active learning (Anderson and De Silva, 2007; Levine and Munsch, 2011; Settles, 2012), cooperative learning (Grisham and Molinelli, 1995) etc. that are more or less related to the inquiry-based instruction.

METHOD

The purpose of the study was to solve a relatively specific field of the pedagogical reality, i.e. to define basic terms with an accent on the problematics of the inquiry-based instruction. In the field of the theoretical research, there were applied several relevant methods. The research was based on the theoretical analysis of the monographs and technical articles published in the scientific-technical magazines and conference proceedings. The excerpted pieces of knowledge were correlated with each other, and the parallels, similarities and differences have been searched.

The concrete details were subsequently generalized, and non-significant facts were abstracted. Through the inductive methods, the more general conslusions were presented, which result is i.a. a definition of the term of the inquiry-based instruction.

The analysis of the term "inquiry-based instruction"

Analysing the domestic and foreign publications, there can be seen a different tendencies in understanding of the term "inquiry-based instruction". Two streams are the most obvious, the first one tends to the expression of the essence of inquiry-based instruction in the problem solving and almost to its identification with problem-solving instruction. For the illustration and more investigation we should name at least few of the definitions:

- J. Petr (2010, p. 139) states that the "inquiry-based instruction is a type of instruction during which is the knowledge created during the solving of a certain problem in the consecutive steps that include a setting of the hypothesis, choosing of a suitable methods to investigate a certain phenomenon, obtaining the results and their processing, conclusion, discussion and very often cooperation with colleagues-pupils as well."
- M. Papáček (2010, p. 40) states that the inquiry-based instruction is one of the efficient activating methods of the problem-posing education and it is based on the constructivist approach to the education. The teacher does not transfer the subject matter in a form of a whole-class presentation in an already-done way but he/she

creates the knowledge by the use of the problem solving and a system of asked questions (communication apparatus). The inquiry-based instruction uses different teaching strategies. Furthermore, M. Papáček states that the basic characteristic of the inquiry-based instruction includes following signs: the pupils ask the inquiry-related questions, they look for the evidence, they form the clarification based on the evidence, they evaluate the clarification with a possibility of using alternatives in the clarification, and they communicate and check their clarification.

- The internet site of School of inquiry-based instruction (2014) states that during the realisation of the inquiry-based instruction the teacher does not transfer the subject matter in a form of a whole-class presentation in an already-done way but he/she creates the knowledge by the use of the problem solving and a system of asked questions (communication apparatus). The teacher has a function of the insightful guide during the problem solving process and he/she leads the pupil in the way that is common for the real research.
- The Manual for the Teachers (Votápková et al., 2013) actually presents the inquiry-based instruction only as a use of the problem method in the process of instruction.

The second stream sees the inquiry-based instruction as a concept of the instruction where the problem solving plays a significant role, however, it is a broader concept that exceeds the problem-posing education and has different aims. The inquiry-based instruction is not, in the simplified way, understood as a simple problem solving, i.a. the problem analysing, searching for the needed information, formulation of the hypotheses and their checking, followed by confirmation or refutation; but as a concept of education that extends beyond. It is possible to name the following definitions, e.g.:

- Artigue and Blomhøj (2013, p. 797) define the inquiry-based instruction as a way of instruction where the students are stimulated to work in a usual scientific way.
- Samková (2011, p. 337) states that the inquiry-based instruction is the instruction inspired by the inquiry and inquiry-related procedures.
- Nezvalová (2010, p. 56) understands the inquiry-based instruction as the instruction where the students form the education in the classroom and the teacher is a facilitator. In relation to the pupils' learning process is the inquiry-based instruction an active process that reflects scientific approaches towards the inquiry and investigation in the nature. It includes the experience, an evidence as well as experimenting and construction of the cognitive structure. Therefore it is consistent with the constructivist approach towards the learning.
- Rychnovský (2011, p. 85) states that the inquiry-based instruction – a term with an appropriate content evaluated as a constructivist-activating educational process – is applied broadly in the world and is also discussed in our educational conditions. The searching of its place in the educational system of our school system is connected to more important educational impact.

It is obvious that the need to solve terminological unstableness of the term inquiry-based instruction and other related terms is becoming to be essential. This problem was already mentioned by e.g. the experts from the European Commission who state: the main problem of the discussion over the approaches to the inquiry-based instruction is a lack of clarity in terminology (Science Education in Europe: National Policies, Practices and Research, 2011).

It is not possible to identify with the first of the mentioned streams in the context of the domestic and foreign terminology because in the characterised concept means the inquiry-based instruction almost the same as problem-posing education. As it was already outlined and will be further explained, the inquiry-based instruction is not based only on the problem solving. This thesis can be also supported by authors such as Rezba et al. (1999) who differentiate the inquiry into several types (according to Banchi and Bell, 2008):

- confirmative inquiry – the question and method are given to the students, the results are already known. The only purpose of the inquiry is to verify the results by the practise itself;
- structured inquiry – the question and method are told to the students by the teacher, the results are already known. The students form an explanation of the given phenomenon on their basis;
- focused inquiry – the teacher poses a research question, the students create a methodological approach and perform it;
- open inquiry – the students ask the question on their own, they think about the method, they perform a research and form the results.

It is obvious that at the first level (confirmative inquiry) do the pupils know the presumed result and the solution of the problem, however, at the highest level (open inquiry) do the pupils solve the problem on their own. The inquiry-based instruction has to be understood as an instruction focused on the inquiry and not on the problem solving. Related to this, the instruction also includes the development of the inquiry-related knowledge, skills, and attitudes that can be essential for the further problem solving. It would be useless, however, to stay only at the level of the gaining and developing the inquiry-related knowledge, skills, and attitudes, on the information-receptive, or the instructivistic level.

Comparing the given types of inquiry to the knowledge presented by the internationally appreciated theorist in fields of pedagogy, I. J. Lerner, we reach a remarkable conclusion. In his works, he dealt with the theory of the education methods. A detailed analysis of his work (Lerner, 1986) actually approves the inquiry-based instruction and considers it as a very efficient and irreplaceable one. Even though he does not use literally the term "inquiry-based instruction", he uses similar ones that are related directly. In the relation to the given problematic, he states mainly the problem-posing presentation, heuristic method and research method during which are applied the different beforementioned inquiry types, see Banchi and Bell (2008).

I. J. Lerner (1986, p. 57) directly connects the choosing of the methods with the educational content which should the school education include. He defines it on the basis of the social experience that he divides into four elements:

1) the knowledge (resp. adopted knowledge) about the world (i.e. about nature, society and technics) and ways of operations;

2) the experience obtained from realising the ways of operations – skills and habits;

3) the experience obtained from the creative inquiry activity that manifest itself in the ability to solve new problems,

4) the experience from the imbued needs, motives and emotions that influence subject's approach to the world and the value system of his/her personality.

Lerner concludes (Lerner, 1986, p.82) that the social experience is very rugged, and this is inevitably reflected in the approaches used in the education. The teaching process is considered as unfinished until there are involved all types of the content and all levels of its acquirement. The information can be considered to be wholly acquired only when it is understood and memorised, applied according to the model and in a new situation.

Therefore it is for this paper desirable to analyse in detail methods related to the educational content that were based on the experience of the creative inquiry activity that manifest themselves in the ability to solve problems. It is obvious that by only repeating the already told knowledge and by performing activities demonstrated before, it is not possible to realise the third element of the educational content.

The first method mentioned by I. J. Lerner is a method of a problem-posing presentation which basis is introducing the pupils not only the already known solutions for certain problems, their domain and way of their application, but also the logic of searching for those solutions. During the application of this method, the inquiry does not take place at none of the levels stated by Banchi and Bell (2008). The second method, which contributes to the meeting of the third element of the educational content, is the heuristic method, which is also called as a partial inquiry method. The purpose of its use is the need of creating skills related to the solving the component phases of the problem. In the heuristic method, the teacher actively leads the inquiry, he/she sets the component phases step by step, he/she shows the conflict situations and he/she sets the realisation of the individual steps himself/herself. The pupils solve the problem that was defined by the teacher. When we compare this method to the other types of inquiry, we reach a conclusion that with a use of the heuristic method is used the structured and the focused inquiry (by the pupils). The third and basic method named by I. J. Lerner (1986, p. 92), used for creating the experience from the creative activities, is the research method, which he considers to be irreplaceable by other methods. This method, also in simplified versions, expects the readiness of a pupil for the nationwide solving of the problematic task and for an individual performance of its necessary phases. If we compare this to the open inquiry, their similarity is obvious.

It is clear that the key element for a better understanding of the term inquiry-based instruction is the term inquiry which can be understood as an activity of an individual

focused on relatively individual and non-recruiting cognition of the reality. It has to be differentiated from a passive acceptance of the information that is very characteristic for the transmissive or instructivistic approaches to instruction. The purpose of the inquiry-based instruction is not only in sense of the pupil, who explores relatively solely the facts which he/she has to acquire, but also in sense of the pupil acquiring new facts actively, i.e. he/she acquires the inquiry approaches and he/she learns to think using the inquiry approach.

Analysing the publications focused on the inquiry-based instruction, there can be observed a tendency to follow the scientific definition of the inquiry (mainly quantitatively based) which is not appropriate because the mutual differences have to be reflected. Firstly, we should mention some excerpts of already published definitions of the inquiry in the pedagogical studies:

- Samková (2011, p. 337) states that the inquiry is an activity during which we observe, deduce, offer hypotheses and try to verify them, do not have to reach any final conclusion – the conclusions are depending on our current perspective – different individuals can interpret the same facts differently. The last three signs of inquiry do contain the bridge between the theory and the practice, between the textbook and the reality. They are the key elements of the correct understanding of the world around us.
- Stuchlíková (2010) states that the inquiry is a purposeful process of formulating the problems, critical experimenting, assessing the alternatives, planning of the investigation and checking, reaching the conclusions, searching for the information, creating models of the studied phenomena, discussion with the others and forming of the coherent arguments.

In general, according to the abovementioned definitions is the inquiry a process that is based on the inquiry substeps that are more or less conformed to the scientific inquiry, typical mainly for the exact sciences: observation and description of the reality (perceptions, knowledge), formulation of the problem, formulation of the hypotheses (suggestion for an explanation with a general validity, logical induction), assumption (logical deduction from the hypotheses), verification of the unity of the facts and the assumption (either by an application of the assumption to the experiment, or by an application on the set of data obtained differently) and verifying of the logical correctness of the previous steps.

In relation to this, it is possible to find a term Inquiry-Based Science Education (IBSE) that designates the inquiry-based instruction of the science-oriented subjects. The implementation of scientific inquiry approaches based on the quantitative methodology is typical for the inquiry-based instruction focused in this way; e.g. the six-phased cycle of the inquiry published by the authors Čtrnáctová et al. (2013, p. 898). When defining an education cycle of the inquiry-based instruction in the science-oriented subjects, the authors used its similarity with the science itself. They state that it turned out that the way of how the scientists perform their research can be analogically typified as a cycle of inquiry which can have different forms, it is possible to typify the inquiry-based education through different models.

The education is different from the research: it has different functions and it accomplishes different aims. We can use the example already mentioned in the previous text. The pupil can verify the validity of a law, which was to him/her transmissively interpreted as generally valid, through the inquiry-based instruction. In order to induct the emotional experience, the pupils verify the law's validity on a concrete example. This process is called the inductive proving. The pupils know the generally valid result in advance, and they have to reach it by the appropriate method which can be given to them as well. The point is to "drag them" into the process of learning by a practical realisation of the inquiry-related activities also assuming that it is not their aim to explore something new, neither objectively nor subjectively.

Another example can be when a pupil uses a syllogism during the inquiry as a deductive reasoning. On the basis of two assumptions, this leads to the logical conclusion on the basis of directly used thought operations. In this case, the exact evidencing is not realised, however, the conclusions can be considered as correct and proved.

The inquiry-based tasks are often time-consuming. Therefore is for the education typical that not all its phases are realised by the pupils, even in the case of quantitative approach. For example, the pupils can be given information that is necessary for the problem solving, or all the phases are realised in more lessons or another study units. Even though the pupils are during one study unit e.g. only observing and describing the reality, they do not solve the problem because it has not occurred yet, or the pupils do not realise the problem situation, they still perform activities typical for the inquiry and this instruction can be correctly named as an inquiry-based instruction.

In connection to the solved problem, it is also beneficial to deal with the English term „inquiry" itself, because it is possible to encounter both terms the inquiry-based instruction as well as the enquiry-based instruction. Both of them are terminologically same, the differences are given by the historical development of English. The term inquiry-based instruction (see Lord and Orkwiszewski, 2006; Amaral et al., 2002; Parr and Edwards, 2004) has also equivalent i.a. inquiry-based learning (see Edelson et al., 1999; Lin et al., 2012), inquiry-based teaching (see Brew, 2003; Kirschner et al., 2006) and inquiry-based education (see Atkins et al., 1996).

Etymologically, the term inquiry comes from Latin. Its meaning is, according to the dictionary, inquīrō = to search, to look for something (Kábrt et al., 2000). In the English speaking countries is the term inquiry understood, according to the worldwide respected dictionary, as a "close examination of a matter" (TheFreeDictionary, 2014). If we use the English Wikipedia, we will find out that inquiry means any process of obtaining new knowledge, dispersing of the doubts or solving problems (Inquiry. 2014). The conception including inquiry, which is based on i.a. abduction, induction, deduction, defining and verifying hypotheses, analogy of the experience, and a transfer of the knowledge on new situations, is obvious. The study of J. Dewey (1910) is mostly used – his contributions to the field of pedagogy are unquestionably remarkable.

It results from the analysis that the term inquiry is understood broadly than just a mere problem solving and that its equilibrium lies at the level of searching the truth,

investigating, dispersing of the doubts and the desire for cognition. Therefore the inquiry is different from research which is also different in German untersuchung/inquiry and forschung/research.

The term inquiry-based activity is obviously closely related the inquiry itself. The meaningful inquiry consists of many individual, consecutive steps and their order cannot be usually changed. The term inquiry-based activity can be understood in two ways – as a relatively comprehensive part of a whole process of inquiry, i.a. the inquiry consists of component activities, or it is an unconditional spontaneity of the pupil that appears when practising the inquiry. The second approach to the term "activity" is in the fields of pedagogical theory often studied more in detail, see i.a. the studies of J. Skalková (1971), B. Rotterová and J. Čáp (1967). The definitions are, to a certain extent, quite close to each other, e.g. J. Maňák (1998) understands the activity as an increased intensive action that can be based on the inner tendencies, spontaneous interests, emotional desires, and vital needs as well as on a conscious effort. Rotterová and Čáp (1967) understand similarly the term "pupils' activity" as a development of their actions, as a direct practical and theoretical action, or as an eager action. Skalková describes the activity in close relation to the didactic meaning of terms such as awareness and aware adaptation of the knowledge. Furthermore, she adds that the pupils are required to be given some tasks which are expected to have a certain level of an intellectual effort to accomplish, active thinking, and individual creative approach to their solution. On the basis of the performed comparative analysis is going to be the term inquiry-based activity understood as a motivated, more or less reflected and purposeful action of the subject focused on the inquiry.

The communication between the pedagogue and the pupil, the learning activity as well as the educational environment may be activating. The primary aim of the activation is the change of the passive pupils into the "immediate participants of learning" (Kotrba and Lacina, 2007); however, the activation process is also related to the teacher. If we think about the activating methods, they are defined as the ways that lead the instruction in order to reach the educational aims mainly on the basis of the learning work of the pupils themselves where the thinking and problem solving is emphasized (Maňák and Švec, 2003).

For a more precise definition of the term "inquiry-based instruction", it is desirable to analyse a term "time period of inquiry", or the inquiry spent time. This not very used term is, in the pedagogical theory, used in similar forms, which is mentioned by Janík et al. (2012), i.a. the use of time (in German – Zeitnutzung), the engaged time and the time on task (in German – aktive Lernzeit). The term time on task is defined by beforementioned authors in accordance with M. A. Prater (Prater, 1992) as an amount of time that the pupils use for the accomplishment of the different activities connected to the school education.

Treiber and Weinert (1982), the German authors, created a time model, which is differentiated in five time dimensions of the education further divided into two levels: the level of the class and the level of the pupils. For our needs it is, however, useful to use one more level – level of the teacher and according to this, it is possible to

differentiate dimensions e.g. the time of teacher's presence in the education and time of the active teaching of the teacher.

The inquiry-based instruction is such approach to the instruction which has a characteristic structure from the temporal point of view. Its specifics are mainly in the fact that it is not based only on the inquiry activities but it also includes the activities specific for more "traditional" instruction. However, the condition is that the inquiry-based instruction includes the inquiry-based activities although they do not have to be used in every lesson. The structure of one lesson can include preparation for the pupil's inquiry so in this case is the necessary knowledge transmitted to the pupil who perceives it as "truth" that he/she does not have to analyse or think about.

The inquiry topic is defined by the area of the inquiry. It includes everything that is supposed to be an object of the inquiry, on what the attention should be focused. It has mostly a broader character, and it can be related to more educational subjects, where is the need of application of the interdisciplinary relations and bonds the most important. During the dealing with one topic, more problems can be solved.

It is appropriate to choose so-called interdisciplinary topics, which reflect more precisely the pupils' needs in the real life to which is the pupil prepared through the education. The situations, in which the individual finds himself/herself throughout his/her life, are not usually isolated, and their solution or conformation demands competences of a complex character as well as competences that can be understood as partial or specific to the field of study. The interdisciplinary inquiry-based topic is a typical basis for the projecting and realisation of the projected instruction.

The term inquiry-based instruction is, therefore, in accordance to the science-based subjects, understood in a sense of the activities directly related to the manipulation with the objects of a material character and with the empirical cognition. The pupil can, however, reach the cognition by thinking only, with the use of methods of the theoretical nature, which cannot be understood as the cognitive transmission that requires generally less activity from the individual. In connection to that, there emerges a demand to perform an analysis of the possible extent of the inquiry-based methods applicable in the educational process. The inquiry-based instruction does not include only the pupils' activities focused on measuring, observing and experimenting, but also activities focused on the cognitive thought processes such as analysis, synthesis, induction, deduction, comparison and specification. In this conception of the inquiry-based instruction (from the broader point of view), the peculiarity also for humanities is obvious.

The empirical inquiry methods are based on the experience that can be obtained directly or with a use of the proper technics (e.g. measuring instruments), they are closer to the concreteness. Their justified application can be assumed mainly amongst the younger pupils – with increasing age should the frequency of using the empirical methods in the inquiry-based instruction decrease on account of the generally theoretical ones. That means that there should be emphasized the development of thinking in connection to creativity.

FINDINGS AND CONCLUSIONS

The purpose of the performed analysis was to point out the impossibility of the monotonous understanding of the term inquiry which can be seen in some of the beforementioned studies. It was concluded that the pupil's inquiry includes also the qualitative approaches, applied mainly in non-scientific and non-technical subjects. It is not possible to acquire the valid and common knowledge of the science-related inquiry-based instruction, and apply it on the broader semantic term – the inquiry-based instruction itself. As it was pointed out, the pupil's inquiry can be performed also without the cognition of a certain problem and its focused solving that means that the pupil can perform the inquiry on his/her own initiative or interest, and from that can a problem be later concluded, which he/she can solve, or, because of the different reasons, he/she will not be able to reach its solution at all. During the inquiry process, the pupil should be led to the application of his/her perception – the ability to "see" the problems. Therefore, we can speak about the inquiry of the non-problematic and problematic character; however, it can be assumed that the greater didactic value will have the problematic inquiry. It was also possible to point out the existence of differences between the scientific inquiry and the pupils' inquiry. For the needs of the education, the pupil's inquiry will be understood as a psychical or physical activity that manifest itself in the activities aimed on the cognition of the studied fact based on the acting on one's own.

On the basis of the performed analysis of the facts related to the inquiry-based instruction, it is possible to perform also the synthesis and to contribute to the unambiguous definition of the term inquiry-based instruction: 1) the inquiry realised in the inquiry-based instruction cannot be identified as the scientific inquiry; however, it is possible to look for some parallels, to perform comparisons and to investigate both, 2) the scientific inquiry and the inquiry realised in the inquiry-based instruction do have different aims, 3) the inquiry-based instruction includes also the inquiry which aim is to realize the problematic situation and to discover the problem itself, 4) the inquiry-based instruction includes also the inquiry that have non-problematic character – e.g. the confirmatory inquiry, 5) there is an educational content that can be realised only with a help of the inquiry-based activities of the pupils, 6) in the inquiry-based instruction are used several teaching methods, mainly of the problem-posing character (problem methods), 7) the realisation of the inquiry-based instruction manifests itself in all components of the instruction, not only in its methods, 8) in the inquiry-based instruction are the pupils active in inquiry which can be understood as a motivated, more or less reflected and purposeful activity of a certain subject focused on inquiry, 9) the inquiry-based instruction is related not only to the pupil but also to the teacher, 10) the whole period of time of the inquiry-based instruction does not have to be spent unconditionally on the direct inquiry, 11) in the inquiry-based instruction, it is appropriate to include also the cross-curricular, interdisciplinary inquiry-related topics, 12) the inquiry-based instruction presumes the use of the inquiry methods not only of the empirical character but also the theoretical ones, 13) the inquiry-based instruction can be based on different amount of inquiry-didactic situations.

By the analysis of the published studies, mainly of the theoretical character, and on the basis of the application of the theoretical investigative methods, it is possible to characterize the inquiry-based instruction reasonably. This is necessary also in relation to needs of the field-specific methodology that currently focuses more on the research of the inquiry-based instruction. Not only for the needs of this study was therefore performed the following definition of the inquiry-based instruction: "*The inquiry-based instruction is an activity of a teacher and a pupil that is focused on the development of the knowledge, skills and attitudes based on the active and relatively individual cognition of the reality by the pupil who learns on his/her own how to explore and explores.*"

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Turkish Abstract

"Araştırmaya Dayalı Öğretim" Kavramının Tanımı

Bu makale sadece eğitsel ve pedagojik teoriye dayalı değil toplumun gereklerine göre de güncel ihtiyaçları incelemiştir. Bu gereklilikler öğrencilerin mantıklı düşünebilmesi, yeni durumlarla baş edebilmesi ve problemli durumları çözmesi için gerekli beceriler üzerinde yoğunlaşmıştır. Kavramsal olarak bu çalışma bu günlerde araştırmaya dayalı öğretimi amaçlayan alan tarafından

kısıtlanan pedagojik teoriden hareketle ortaya çıkan terminolojiyle ilgili konular üzerine yoğunlaşmıştır.Pedagojik teorinin gelişimiyle yakından ilgili olan araştırmaya dayalı öğretimin uygulanmasıyla (sadece Çek Cumhuriyetinde değil), terminolojik olarak bir problem ortaya çıkmıştır. Araştırmaya dayalı öğretim ne çok biliniyor ne de kavramın kendisinin ne anlama geldiği biliniyor. Sonuç olarak bu çalışma psikoloji, felsefe ve teknoloji gibi alanları tartışmada daha geniş bağlamları olan pedagojik gerçekliğin nispeten daha iyi tanımlanmış kısmının çözümlenmesine odaklanmaktadır. Bu çalışmanın sonuçları içindeki temel bileşenleri tanımlayan bir tanımın üretilmesini farklı boyutlardan bakarak araştırmaya dayalı öğretimi açıklamayı amaçlamaktadır.

Anahtar Kelimeler: araştırmaya dayalı öğretim, terminoloji, tanım, özelleştirme

French Abstract

La Définition du Terme "instruction à base d'Enquête"

Key L'article réagit sur les besoins actuels basés non seulement dans la pratique éducative et la théorie pédagogique, mais aussi dans les exigences de la société. Ces exigences se concentrent sur les compétences des élèves qui doivent pouvoir penser rationnellement, traiter les nouvelles situations et résoudre des situations de problème. Conceptuellement, ce papier se concentre sur les questions liées à la terminologie, qui surgit principalement de la théorie pédagogique qui est de nos jours limitée par un degré insatisfaisant d'achèvement dans le champ qui est visé sur l'instruction à base d'enquête. Avec l'application de l'instruction à base d'enquête (non seulement dans la République tchèque) près lié au développement de la théorie pédagogique, a là apparu un problème de la base terminologique. L'instruction à base d'enquête n'est ni célèbre, ni a compris ce que le terme lui-même signifie. Donc, ce papier se concentre sur la résolution d'un domaine comparativement bien définie de la réalité pédagogique qui, cependant, a un contexte plus large en discutant d'autres domains scientifiques liés - la psychologie, la philosophie et la technologie. Le résultat de cet article doit spécifier le terme l'instruction à base d'enquête des points de vue divers en formulaire d'une définition qui y caractérise les éléments de base contenus.

Mots Clé: instruction a base d'enquete, terminologie, terme, definition, specification

Arabic Abstract

تعريف لمصطلح" التعليمات القائم على التحقيق"

تتفاعل هذه المادة على الاحتياجات الحالية القائمة ليس فقط في الممارسة التربوية والنظرية التربوية، ولكن أيضا في متطلبات المجتمع. وتركز هذه المتطلبات على الكفاءات التلاميذ التي يجب أن تكون قادرا على التفكير بعقلانية، للتعامل مع الأوضاع الجديدة، وحل حالات المشكلة. من الناحية النظرية، وتركز هذه الورقة على القضايا المتعلقة المصطلحات، والتي تنشأ أساسا من نظرية التربوية التي تقتصر في الوقت الحاضر من قبل على درجة مرضية من الإنجاز في الحقل الذي يهدف بناء على تعليمات القائم على التحقيق. مع تطبيق التعليمات القائم على التحقيق (وليس فقط في جمهورية التشيك) ترتبط ارتباطا وثيقا تطوير نظرية تربوية، ظهرت مشكلة من الأساس الاصطلاحي. تعليمات القائم على التحقيق ليست معروفة ولا يفهم ما يعنيه هذا المصطلح نفسه. لذلك، تركز هذه الورقة على قرار من منطقة نسبيا محددة جيدا من واقع التربوي التي، مع ذلك، لديها السياق الأوسع عند مناقشة المجالات العلمية الأخرى ذات الصلة - علم النفس والفلسفة والتكنولوجيا. نتائج هذا المقال هو لتحديد تعليمات يعتمد على الاستفسار الأجل من مختلف وجهات النظر في شكل من أشكال التعريف الذي يميز العناصر الأساسية الواردة فيه.

الكلمات الرئيسية: تعليمات القائم على تحقيق، والمصطلحات، المدى، تعريف، والمواصفات.