Семиотическая структура хэштега и принципы его функционирования в информационных образовательных технологиях

Проблема и цель. Авторы раскрывают следующее противоречие в использовании хэштега в современных образовательных технологиях: современные онлайн-коммуникации оказывают самостоятельной силой, «затаскивающей» молодое поколение в глобальное образовательное пространство, что создает условия дезориентации и сложности в поиске смыслов в многообразии текстов. При этом, сами по себе инструменты онлайн-коммуникации (хэштеги) могут рассматриваться как «качественные точки» в процессе формирования смыслов. Цель исследования – описать значение хэштега в информационных образовательных технологиях и продемонстрировать его потенциал для образовательного процесса.

Материалы и методы исследования. На основании семиотической концепции Ч.С. Пирса и теории критического анализа дискурса (Т.А. ван Дейк) предложена методология изучения хэштега. Хэштег рассматривается как виртуальное коммуникативное событие, имеющее семиотическую триадичную структуру – это динамическое единство языковой формы, значения и действия. Авторами описаны принципы функционирования хэштега и закономерности семиотического поведения человека в онлайн-коммуникациях, являющихся основой информационных образовательных технологий.

Результаты исследования. Результаты исследования дают возможность выявить потенциал хэштега как знаковой структуры, влияющей на усвоение учебной информации. Авторы описывают способы работы с хэштегом для организации обучения посредством информационных технологий.

Заключение. Результаты исследования значимы для теоретической базы исследований в сфере образования и организации учебных процессов.

Ключевые слова: хэштег, медиа событие, семиотика, Интернет, коммуникации, образование, технологии, Пирс, Дэйк, семиотический хаос

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Problem and Aim. Authors demonstrated contradiction on the hashtag functioning in contemporary educational technologies: nowadays, online communication can be recognized as an independent force, which drags young generation into global education space. This situation establishes condition for disorientation and complexity in searching for meaning in a variety of texts. However, the hashtag as a tool of online communication can be considered as a “qualitative point” in process of meaning making. The aim of the study is to define the role of the hashtag in information education technologies and to demonstrate its’ educational potential.

Materials and research methods. The study offers some important insights into methodology of formation of the hashtag through two theories: semiotic concept of Ch.S. Peirce and the critical discourse analysis of T.A. van Dijk. The hashtag considered as virtual communicative event. And this communicative event has triadic nature as a dynamic unity of linguistic form, meaning and action. The approach applied allows explaining the patterns of semiotic human behavior in the global education space.

Research results. Results of the study demonstrate the hashtag potential as a sign structure, which has an impact on educational process. Authors define methods of implementing the hashtag as a tool in information education technologies.

Conclusion. The results of the study are significant for the theoretical base of research in the field of education and the organization of educational processes.

Keywords: hashtag, media event, semiotic, Internet, communication, education, technologies, Peirce, Dijk, semiotic chaos

Introduction

The new expanded UNESCO 2030 Global Education Agenda (adopted in November 2015) aims to ensure quality learning outcomes for all citizens. Educational targets are reflected in «Goal 4» as follow: “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” [13]. The draft resolution on the UNESCO Institute for Information Technologies in Education (IITE) highlights and appreciates the important contribution of IITE to the implementation of UNESCO’s strategic goals in terms of analytical collection and dissemination of information on best practices in the use of information technologies in education [16, p. 41].

Modern society is distinguished by the extreme complexity and tension of communication. Before our eyes, changes are taking place, caused, among all, by the growing role of semiotic structures in communicative interactions. In fact, the speed of communication, the dependence of the sign on the rate of information transfer, influence on the global education space. The specificity of the education is the assignment of the semiotic function of constructing reality to new media communication technologies. We are talking about the fact that mobile communication, the Internet, television, etc. are appointed to be “responsible” for the creation of new knowledge and skills.

The digital society has formed with specific attributes such as e-commerce, e-culture, e-health, e-government and e-science. The development of technology tools put forward of e-learning. Unlike distance learning, e-learning uses all the advantages of modern Internet space and network learning: the transfer of learning results, the possibility of different collaboration, consultation and discussion, the exchange of experience, teacher support, and much more.

Internet communication forms a new culture, a new environment of education and new rules of this education technologies. In this regard, the study of such phenomena of digital communication as the hashtag is one of the most promising areas for understanding the regular functioning of information educational technologies, as well as the study of communicative knowledge, which is directly related to the growing role of modern technologies. For example, L. Baeva highlights: “In some specified sense, human beings live in two worlds, which they do not trust in full; offline communication remains important, although the value of the virtual ‘other’ one is developing, the interaction which has its rules. The logging onto the Net to ‘meet’ the ‘other’ one, and transcending under these conditions turns out to be insignificant, senseless, as these relationships involve the simulation of feelings, trusting, understanding, and participation in the ‘other’ one’s life” [9, p. 41]. In this regard, we agree with researcher and also follow the idea that online communication can has a “hidden power” to involve young generation in the process of meaning making. Xu L. et al. continuing this ideas in their work and demonstrate that mental images (and “signpoints”) can play a pivotal role in conceptualizing teaching process and can tackle some learning difficulties [24, p. 13].

Following N. Luhmann, we consider online communication as an element of an all-encompassing social system [25]. The new status of modern media communication is due to the fact that they are becoming iconic at the maximum [27, p. 15]. The hashtag
is a communicative-semiotic unit of fixing information, including educational content stored on the Web and freely available to students. This leads to situation in which “global communication technologies, along with many positive factors, are recognized as a source of transformations in sociocultural reality”[5]. Following the opinion of Rodríguez C. linguistic pragmatic aspects in modern communication can play as a complex communication tool in pre-linguistic level [19].

The hashtag is also can be considered as a precedent phenomenon. Any precedent element in a compressed form is able to convey information about the source or about the whole cultural / historical event. It makes possible to ensure the “recognition” of this phenomenon by the addressee and its subsequent interpretation. Different connotations and certain associative links are important in the educational process. The Internet offers a huge amount of texts and in the chaos of educational products. New information education technologies require special attention because they are also connected with new ways of perceiving information by the younger generation. The search for instruments to attract the attention of students is an important requirement for new information educational technologies.

In this regard, a problematic situation occurs: on the one hand, the basis of information technology of online communication are continuous, and on the other hand, the description of these processes is possible only at a certain “stop” point, which is the result of a specific process. These “qualitative points” fix the essence of the refraction of meanings in the flow of information. For example - the infinity of online lectures, which draw attention to the most important points. The reason for this is the absence of the emotional component of the lecturer and the situation of personal presence. In this regard, the lecture should be interrupted in a special way, it is necessary to construct a “moment now”.

A certain point (the “now” moment) makes it possible to catch the elusive in the procedural and duration of media communication.

This article is devoted to the analysis of the structure of trigger points “now” – communicative events – hashtags in the duration of the educational process taking place in network space. The relevance of the proposed study is determined by the situation of growing contradictions in educational space, in which global communication technologies are recognized as a source of transformation of sociocultural reality [27]. In the same vein, Sonne J. and Erickson I. in their work noted that emotions, which users express through the hashtags and images in social media, can represent total mood in some area of interests [22].

The search for the sources of such transformations and the determination of the mechanism of their functioning make it possible to identify the causes of such contradictions, when, on the one hand, information technologies are considered as progress for the educational system, and on the other hand, they are also considered as the reason of the degradation of education.

The significance of the proposed research is determined by the fact that communication (online, mostly) is becoming participatory and the main design force for new formats of educational process. It is important to understand that network education technologies are closely related to the creation of “new selves”, which is especially important in the process of identity formation [1]. The synergy of these processes creates the conditions for solving
one of the significant goals - the study of the patterns of information education technologies in the global educational space. These processes especially important in a situation where mass production and consumption of pseudo-images of the future, intensified by the digital revolution, affects the educational process.

Materials and methods

In order to understand what contradictions of the hashtag functioning can be revealed while its’ implementing in nowadays educational technologies authors assumed that the theoretical foundations of the critical analysis of discourse, methodologically assigned with cognitive analysis of discourse by T. A. Van Dijk [10] and the triadic nature of Ch. Peirce’s semiotic concept [18] are significant for research purpose. While investigating the problem of modern online communication we conceptualize the idea of modeling cognitive structures in the public cognition through the analysis of media communication. Important ideas of topology of production and perception of information, thematic representation, micro- and macrostructure of the text, its style and rhetorical point were taken from Handbook of Discourse Analysis by T.A. van Dijk [11]. His approach in modeling discourse reality helped authors to identify “fuzziness” of hashtag functioning. This “fuzziness” is explained by the fact that different readers highlight different meanings as basic, important and also empower the discourse with different content [7]. As the object area of research is modern education technologies we assume that this “fuzziness” is the main problem in highlighting the meaning in different context.

Results

Hashtag as a starting point in constructing new meanings in the information educational environment

Current researches highlight the conceptual conclusions of post-non-classical methodology, the search for “qualitative points” in the processes of self-organization also emphasized. These processes, from the point of view of the authors, ground the information educational environment. By “qualitative points” we mean moments that fix the essence of the refraction of meanings in the stream of pure duration: when a certain point is designated, the moment “now” helps to catch the elusive in the processuality of the world around us.

For example, we can catch this moments when a person perceives music. As we know, the music is a certain sequence of sounds made by a musical instrument or orchestra. Similarly, the music is perceived as a whole processes of symbolic dynamics, while listening to a piece of music, we “immerse ourselves” in it, moreover, with feelings rather than with our mind. However, a car siren or the sound of breaking glass can also considered as sounds. Why do we perceive music as a whole processes, and these sounds as something separate? Of course, the fundamental difference is that the sounds of music are interconnected and are perceived not separately, but as a single whole. The “now” moment can be defined by ongoing time as a point: something happens that leads to a stop when the flow of experiences is interrupted. And if awareness of the whole process becomes possible at all, it is only when the “now” moment happens. In other words, something happens that could be
the main condition of the realization of integrity. Everything, that was previously perceived in endless movement, appears in harmonious unity, acquires clarity or the illusion of clarity. The relevant conclusion is the following statement: in modern information education technologies, it is important to determine the moments of the transformation of meanings in the duration of these processes.

In modern information education technologies, the semiotic component becomes the key figure. A person in the processes of symbolic interactions creates new semiotic constructs based on the discursive model. In fact, “everything in the world arises only due to the constructive action of a man” [11, p. 25]. Many authors highlight that the social prevails over the individual. In this regard, social construction becomes a prerequisite for the formation of semiotic constructs - as fixing moments of students attention, one of which can be considered as the hashtag[14].

Hashtag (as a certain semiotic construct) has a special communicative status in modern digital communication. We can say that the hashtag acts as a result of social construction and interpretation [22]. The “now” moment can be considered as a single collective frame that reflects the vision of the perspective on the part of the user (who is a part of the digital communication). Through active transformation of the reality hashtag starts to play the role of a “trigger” – the “now” moment, at the appearance of which the direction of the process are changing.

In any social network, hashtags help to create so called a “channel, topic” so the author allows other users to understand what is being said without reading it. Users share hashtags in response to events in the form of participation in the discussion, criticism or passive approval. Such peripheral contributors are critical to increase message and create online content. This leads to the formation of a digital agenda that reflects the sum of the issues that are important at the moment.

For example, during the COVID-19 pandemic, among Russian users of social networks, the need for various ways of distance education and earnings has increased. New semantic requests the need for new digital meanings. This is proved by the total number of requests of the hashtag - 224097 publications on this topic in 2020 (“online training”, “online consultations”, “online sales”, etc.). The link “money#education#income#online” demonstrates the need for new formats of earnings (the studies of hashtagging processes were carried out by the authors in the framework of the RFBR project “Research of processes of visual design of the image of the future of Russia in the everyday life of social media (the case of Instagram)”). Similarly, it is possible to analyze information education technologies from the point of view of changing the dynamics of processes.

Authors suppose that in the synchronic and diachronic development (extent) of these processes, as a certain continuous flow, a point “now” could be found, a moment of “grasping” of meanings, in which the past, present and future seem to “collapse”. And this is the media event – the hashtag itself. The presence of the hashtag in communication changes their direction [29]. For example, the hashtag performs a predicative-classifying function, and in addition, it is able to “enter a particular class of objects and / or attribute a particular assessment to an event”.

Thus, educational material on the Internet can be presented through the hashtag technology. For example, when presenting educational material. It can be labeled as
follows: #Svobodavybora (#Freeofachoice), etc. (the Decembrist uprising, the Bolotnikov uprising, the October events of 1917, etc.). The study of the hashtag as a starting point for constructing new meanings allows to influence the creation of new meanings. In this regard, it is important to consider the hashtag as new semantic discursive category.

*Hashtag structure as a communicative event*

The understanding of discourse proposed by T. A. Van Dijk, reflects the mentality and culture in a general. The author noted that discourse is a “connected text”, “merged” in a communicative event, considered as a purposeful and social action, as a component involved in the interactions of people and the mechanisms of their consciousness [3]. In a certain temporal, spatial and other context, a communicative action takes place, which can be verbal, written, have verbal and non-verbal components. This can be illustrated in few examples that follow: like of an interesting post, a reply to a comment under the post. In fact, these are all random events. That all should be considered as a discourse in the most general sense, where semiotic product of a communicative action is a communicative event.

T.A. van Dijk separates the interpretation of discourse in the broad sense of the word (as a complex communicative event) and in the narrow sense of the word (as a text or conversation). Both concepts have in common similar processes, there are, in one hand, special strategies for selecting the most significant information that is important in a given context. And, in the other hand, that the researcher considers the structure of a “communicative event” as a complex unity linguistic form, meaning and action [7]. The value of the discourse model, proposed by T. A. Van Dijk, is that the scientist interprets discourse as a complex communicative phenomenon, not only including the act of creating a certain text, but also reflecting the dependence of the generated speech work on a significant number of extralinguistic circumstances: knowledge about the world, opinions, attitudes and specific goals of the speaker as the creator of a text [7]. That conclusion is supported by Yu.N. Karaulova and V.V. Petrov, which accumulate the views of T. A. Van Dijk on discourse [2]. These authors emphasized that this statements also should include knowledge about the world, opinions, attitudes, goals of the sender, which are necessary for understanding the text.

We assume the hashtag as a communicative event, that fixes certain meanings and connects various discourses. The most effective way is to integrate the hashtag into the context, which makes the hashtag more organic and saves space. As part of new education technologies, the hashtag “works” on the principle of a “keyword”, which allows you to highlight the main thing in education information. In addition, hashtags are very popular among teenagers, so their use in the classroom will not cause rejection and may well become a certain motivational incentive to participate in the educational process.

The discreteness of communicative events with a tripartite structure forms the “media text” as a syntactic-semantic-pragmatic device (according to the definition of U. Eco) , which corresponds to the nature of the sign identified by Ch. Peirce (syntactics – semantics – meaning – action) [18].

The structure of the hashtag as a communicative event, according to our hypothesis, is identical to the triadic structure of a sign, like an image that we observe in a kaleidoscope: the same set of elements, with each turn of the kaleidoscope tube, lines up in a new
way, forming a new pattern with an unchanged structure. This statement is essential for determining the special communicative status of the hashtag in education technologies.

It is with the triadic principle of the structure of the hashtag as a semiotic formation that we associate the understanding of the processes of its formation and functioning in the media space. The internal structure of the hashtag is identical to the triad structure of the sign, and this makes it a starting point for creating new meanings. Such vision of the principles of the hashtag makes it the subject of social semiotics, when the goal of using a media event in communication is important for what purpose uses particular sign [15].

This conclusion allows us revealing the internal structure of the hashtag as a communicative event functioning in three dimensions of semiosis. The semantic level forms the hashtag as a language in constant motion, incorporating both cultural traditions and the individual characteristics of the communicant. For example, if a hashtag is used as a title by two or more authors, either a narrative with collective authorship or a dialogue can be created [26]. At the same time, the hashtag binds together the text not only semantically, by marking the topic, but in some way “syntactically”, being a material marker of the connection of two or more messages. This aspect of discourse is called local, or sequential, connectivity [7]. Events (moments) with the same hashtag are connected, in addition to itself, by the unity of the place and time of the events described.

For example, if we want to focus the attention of students on particular text, we can complicate the task by asking to compose series of hashtags based on read book or article. As these hashtags are consider as meaning-making events which construct general idea of a context. Since new generation (students) start to loose ability to understand longread text due to information overload, these education techniques could be efficient tools for a teachers.

This would be the syntactic level of the media event, taking into account the unconditional sequence and coherence of sentences. It makes possible to study interpretations correlated with each other: the meanings of words or sentences are considered as functions of the meanings assigned to previous sentences. “Series of tweets are created completely independently of each other, are connected solely by the topic stated in them, and are not supported by other means of creating the effect of semantic coherence” [26].

The pragmatic level of the hashtag as a media event is expressed in the fact that this is an action, as a product of media communication and the actions of the people themselves (users of social networks). For example – label names: “Label names become a means of creating a certain colored representation of the designated character or phenomenon. The massive use of one or another hashtag in such a function becomes a media event and gets on the media pages” [26].

Thus, discreteness (as semiotic formations) becomes an essential moment in the construction of the hashtag as a communicative event, the possession of an internal structure in accordance with the goals set while encoding the sign's broadcast channels. All of the above gives grounds to proceed to the next step in our reasoning: based on the semiotic structure of a communicative event that we have identified as a process that has a specific “geometric shape”, to establish the principles of its functioning in digital communicative processes, that is, to answer the question. How can the hashtag — this moment of “now” in communication — influence the way of thing are represented in information education technologies?
Discussion of the results

Thus, we concluded that in the processes of information education technologies, the hashtag makes it possible to draw the attention of participants in educational relations to certain discourses. This spatio-temporal event, the point of “grasping” - an act of reflection of the participants in communication, filled with feelings and emotions, which determines the features of its meaning. The time factor in the process of interpretation endows the communicative event with different features at the same time: scale, individuality, originality, etc.

Digital communication can be considered as a phenomenon of a new reality in which all sociocultural diversity is revealed, including its discreteness [4]. In this point of view we agree with D. Wolf D al. who also based their work on the semiotic framework of Peirce’s categories [23]. Results of our findings correlate with the cognitive-semiotic typology presented in article of Wolf D. et al., which reflects sensory and association networks underlying the interpretation of observed non-verbal social interactions. However, very little was found in the literature on the question of communicative models in modern education technologies within usage of the hashtag as a spatio-temporal event – most of the works investigated movie narratives [23], showed relevant tools of influence measurement [21], analyzed semantic aspects of social networks during political debate [17] and etc.

Still, the main difficulties for implementing new education technologies based on communicative discourse within “hashtaging” are correlate to the absence of theoretical works of principles of hashtag functioning. These principles in information education technologies are related to the duration factor. The first principle of functioning is connected with the semantic “stop” in the process of presenting information. “We change our behavior, our activities in the world – forever or for a while <...> In this place, the boundless semiosis stops (the stop is not finite in a temporal, chronological sense, because our entire daily life is permeated with such changes in habits)” [8].

In this statement, we rely on the point of view of Ch.S. Pierce about the pragmatic clarification of reality, which Pierce understands as the ability to influence arbitrary self-controlled action through adequate reflection. For example, the teacher offers students to read an excerpt from the text, work it out using the keyword method and make a sequence – a chain of hashtags. This is an act of reflection on the established meaning, but new texts are not created. Hashtaging can represent different trajectories of text interpretation.

The second principle is related to the moment when several semantic options appear at the moment of using the hashtag.

Therefore, we distinguish between the suspension time allocated by U. Eco, from time of breaking in the process of semiosis. This is a kind of bifurcation point, and “at bifurcation points, i.e., critical threshold points, the behavior of the system becomes unstable and can evolve to several alternatives” [6]. That is, this is the moment after which the direction of the process changes, and such an “event can be completely negligible if the system is stable, and become very significant if the system, under the influence of non-equilibrium bounds, goes into a non-equilibrium state” [20]. For example, popular hashtags that perform the functions of increasing expressiveness, achieving a comic effect, gaming, often turn into
Internet memes. Hashtag memes undergo various kinds of transformations in the process of use and acquire many varieties.

With respect to the main research question, it was found that the recognition of the hashtag meme serves as the basis for its further use, including in traditional areas of communication. The use of a hashtag meme in the educational process will allow: to ensure the “recognition” of information and its subsequent new interpretation. The restoration of cultural connotations and certain associative links is necessary to achieve a certain educational effect.

These two processes can be explained from the point of view of the flow of semiosis, as a process of sign interpretation. These are two different processes.

In the process of suspension, time in semiosis flows, “stops for a moment”, and the starting point for the subsequent flow will be the same interpretant. At this moment, a dynamic interpretant is formed, which is an intermediate result in the process of generating an event. In this process, the media event finds itself in opposition, otherness, break with other events. This, as we noted, is a kind of “intermediate” stage that does not affect the course of other events. In the process of meaning, the meaning that was attached to the event has not yet become significant for sociocultural processes. The next process is associated with a break in the temporal flow of semiosis, when the final interpretant, being formed in the process of signification, becomes both a result and a rule. As a result, the final interpretant manifests itself in the socio-cultural system and sets the terms that determine the nature of human activity, and as a rule, it is transformed into a mode of action. Thus, the principle of the functioning of the hashtag in digital communication is associated with the process of interruption in the meaning flow of educational process.

For example, information sources used in the educational process can be very voluminous, students are often lost, unable to highlight the main thing: the main idea, the primary meaning (if we are talking about a visual source). In this case, hashtags as a new tool of information education technologies can become a support.

In contrast to earlier findings [12], however, no studies focused on the problem of the dependence on the perception of information which can have direct correlation with new digital communicative model. Solving this issue is a significant challenge for Russian tertiary institutions and politics of implementing information technologies in education.

Conclusion

The hashtag can become an instrument for managing of meanings in information education technologies in determining the way of functioning or acting with it in the educational space. On the basis of an integrative interdisciplinary approach, Teun van Dijk (where the researcher refers to the ideas of Ch. S. Pierce and U. Eco), as well as introducing into the analysis of the conditions for the formation of a communicative event the definition of “discourse” as a structure that opens up to changes. It has been established that the hashtag as a communicative event and a semiotic phenomenon is created according to the principles of semiosis functioning. Its semiotic structure is a complex dynamic unity of linguistic form, meaning and action, which corresponds to the three dimensions of semiosis (syntax - linguistic form, semantics - meaning, pragmatics - action, respectively). The acquisition of
a certain form by the hashtag is due to the actualization of one or another dimension of semiosis in the process of interpretation, which is a key condition for the formation of new meanings in educational tests. This manifests a flexible resource of information education technologies. The principles of the functioning of the hashtag in the infinity of educational resources follow from the presence of the time duration factor in the process of meaning formation. The time factor endows hashtag events with various features: scale, individuality, originality, etc. And, thanks to this result, tools and technologies are created that determine the way the subjects of the educational process act in relation to a given hashtag: repeat it, copy it, change it, paste it into another context, create a space of new meanings, etc. Such an understanding of the principles of the functioning of the hashtag makes it the subject of not just semiotics, but social semiotics, when it becomes an important tool for its use in information education technologies.

Thus, the hashtag can be considered as a starting point for the formation of new meanings (interpretant) in the educational space. It helps to fix the attention of students on certain semantic moments. The structure of the hashtag as a communicative event explains the patterns of its functioning in three dimensions of semiosis (the process of formation of new signs). The explanation of the principles of the hashtag in modern education technologies demonstrates the new possibilities of hashtagging as a new didactic technique in the educational process. Thus, hashtags are a necessary and useful tool of digital education technologies for working not only in social networks. Understanding how to correctly put a hashtag, will help to organize educational information. Hashtags make it easier to find the information you need among an endless stream of posts and texts, and help draw attention to a particular topic.

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