The cataloging of virtual communities of educational thematic

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Abstract

This article considers the current problem of investigation the specific of specialized catalog of educational virtual communities. Peculiarities of catalogs of virtual communities are formed. This study provides a method of organization of catalog of virtual communities of educational direction. This method is based on a formal model of virtual communities as an environment of information activity of the higher educational institutions. The result of the research is the method of socio-demographic characteristics identification of virtual communities' members. The formal models of internet-resources as an object of information activities mostly carried out in researches of internet-catalogs construction are formed. Thus, the primary task of this work is to develop the method of cataloging of virtual communities of educational direction and development of architecture and methods of organization of such catalog.

Introduction

In this research the task of catalog formation of educational establishments and their relevant educational resources and organizations is considered. The solution of this task is directly based on the creation of specialized formal domain model with a detailed description of characteristics and important synthetic parameters.

The new field of researches is the formation of specialized catalog of social groups that under the influence of higher educational institutions or education industry in general are formed. Yet this field investigated has not been adequate. The social significance of these informal groups is growing, especially with the transition to their self-organization on the basis of specialized Internet services such as social networks and web forums (Syerov & Kravets, 2009; du Preez, 2010; Mahmood et al., 2013; Yalan et al., 2014).

In the meantime, this approach for the accounting of social self-organization and educational institutions are not effective and fully reflection of tendencies of social group transitions into a global network and formation on their basis the virtual communities.

So, the urgent task is cataloging of virtual communities of educational direction and development of architecture and methods of organization of such catalog. This method is based on a formal model of virtual communities as an environment of information activity of the higher educational institutions.

The formation of formal models of internet-resources as an object of information activities mostly carried out in researches of internet-catalogs construction (Nagy, 2011).

Today a considerable number of effective functioning catalogs of online resources of universal direction (Open Directory Project – DMOZ and Yandex – facet) and specialized online catalogs and guides, especially in educational sphere. In the above-mentioned projects some typical list of characteristics of internet-resources and corresponding to them relations and attributes in the data model of catalog is formed. However, these existing projects and scientific researches in this field a number of critical aspects to solve this problem are not considered. In particular, the current catalogs for the preservation and elaboration of specialized data is not provided. These data are specific and important issue for virtual communities in general and virtual communities that around educational issues are formed.

Then additional characteristics that should be included in the typical specialized catalog are analyzed. The analysis in two ways is realized:
   o   additional characteristics that inherent in virtual communities in general;
   o   additional characteristics that inherent in social groups around educational issues are formed.

Thus, specialization of the catalog is defined as characteristics consolidation of types and in certain circumstances can be adapted for other characteristics that relate to the educational sphere (scientific sphere, cultural sphere and sphere of public administration).

Thus, the present research tries to have a new look at the cataloging of virtual communities of educational thematic.

Peculiarities of catalogs of virtual communities

Prospective tasks of the organization, automation and optimization of information activities in virtual communities the wide range of theoretical and practical tools from the sphere of software and technical solutions and sphere of social communications are covered. Therefore, the model of the virtual community must maximally completely display the characteristics in mentioned spheres.

The model of the virtual communities catalog includes the following group of additional features:
- o technological parameters;
- o quantitative parameters (parameters of volume and intensity);
- o socio-demographic characteristics (Fedushko, 2011); and
- o communicative characteristics.

Specified characteristics and parameters are fundamental, because from the result obtained as a result of direct analysis of virtual communities and it is actually the primary data about the community. In this paper, synthetic parameters also are considered. These basic parameters are foundation of the synthetic parameters, which using of the developed methods is formed. In particular, this is parameter of the virtual community importance. In this case, the system of basic characteristics of virtual community VC_i is described by a tuple:

$$VC\_Ch(VC_i) = \langle VT(VC_i), VA(VC_i), VI(VC_i), VD(VC_i), VG(VC_i) \rangle \tag{1}$$

where $VT(VC_i), VA(VC_i), VI(VC_i), VD(VC_i), VG(VC_i)$ are relevant groups of characteristics.

1. Technological parameters of virtual communities

Technological parameters of communities indicate on software and technical platform and technical means of organization of web community (Peleschyshyn & Syerov, 2006) communication. Two groups of parameters are distinguished:
- o characteristics of software and technical platforms; and
- o characteristics monitoring and searching.

Table 1. Technological parameters of the virtual community (group VT)

Parameter	Denotation	Domain	Comment
characteristics of software and technical platform			
Type of platform	VTPT	List of types	(forum, media, social network, and so forth)
Platform	VTP	List of platforms	Depends on type
Markup language	VTML	List of markup languages	(HTML, BBcode, Wiki)
characteristics of monitoring and searching			
Web address of community	VTHP	Universal resource identificator	Web address of web community homepage
Web address of search	VTSP	Universal resource identificator	Web address of search in community
Method for news	VTNT	List of methods	(email, RSS)
Typical query to search GPS	VTQT	String of characters	Template of advanced query to the global search engine of localized search in web community

The formalization and systematic processing of the technical characteristics is an important element in the implementation of software and algorithmic complex of realization of the University information activities in virtual communities. In particular, these characteristics should be used in:

- o   software of imposition, verification and publication of materials;
- o   means of rapid detection of the web community reactions;
- o   means of deep information retrieval in a virtual community.

The experts set the values of these characteristics.

Template of expanded query separately for each GPS is determined, taking into account feasibility of using certain GPS. The template is prepared parameterized query on specific macro language that in GPS are used. In a particular web address of community, case markers (keywords) and others are used as the parameters.

The parameter VTPT has significant impact on the weight of coefficients with quantitative parameters in web community importance determining. For platforms "mass" type (such as social networks and media) coefficient is several times lower than the platform of the "forum" type by virtue of the simpler procedures for entry and response.

2. Quantitative parameters of the virtual community

Quantitative parameters of virtual communities into 2 groups according to dynamic are divided:
- o   parameters of volumes;
- o   parameters of intensity.

Parameters of the volume of the virtual community VC_i must cover the following basic aspects of web community's positioning (Peleschyshyn et al., 2012):

- o volume of the virtual community content;
- o volume of web community audience;
- o parameters of the citation and members' authoritativeness of web community;
- o ranking parameters of the web community in the competitive environment.

Each of the mentioned aspects of its corresponding group of parameters is displayed. The following table summarizes the proposed set of parameters of volume:

Table 2. Parameters of the volume of the virtual community (group VA)

Parameter	Denotation	Domain	Comment
Volume of content			
Number of threads	VAPC	Natural number	No comment
Number of discussions	VADC	Natural number	No comment
Number of attachments and multimedia	VAFC	Natural number	No comment
Volume of web community audience			
Views topics	VAVC	Natural number	No comment
View topics (without robots)	VAVNR	Natural number	No comment
The number of registered web members	VAMC	Natural number	No comment
Number of authors	VAAC	Natural number	No comment
Number of authoritative contributors	VAAAC	Natural number	With special status (personalized, authoritative, and so forth)
Parameters of the citation and members' authoritativeness of web community			
The number of links to web community discussion	VARC	Natural number	Citation in web without hyperlinks
Number of mentions in the media	VAC	Natural number	No comment
PageRank	VAPR	[0..10]	Citation index of Google homepage
Ranking parameters of the web community in the competitive environment			
Generalized rank among competitors	VACR	[0..100]	Sequence number
Probability of transition	VAPJ	[0;1]	Probability of website selecting among competitors during search

The assessment of the web community importance the presented parameters are required. Specified parameters can be calculated only based on publicly available data.

The important mechanism for mentioning parameters determining is the information acquisition from global search engines (Google, and so forth) or from paid services of analysis of web sites positions regarding the position of web pages discussions.

Selected parameters can be established only by an expert (VAC, VACR, VAPJ and others). The accuracy of separate parameters is a topical issue. Obviously, the most quantitative parameters are quite inaccurate or overly dynamic and rapidly changing.

However the primary purpose of these parameters is the determination of the parameter of the virtual community importance and other complex parameters that are the basis for planning of work priority of an information image building.

In this case, the parameters of the accuracy and correctness of their comparison between communities are important. The proposed set of parameters is completely provided when it uses identical tools for each community.

The definition of parameters is necessary to assess of resource intensity that are constantly involved in the process of information activities in the community. In the Table 3 proposed a set of parameters of intensity is reduced:

Table 3. Parameters of the intensity of virtual community (group VI)

Parameter	Denotation	Domain	Comment
dynamics of web content formation			
Average number of new themes per day	VID	Natural number	No comment
Average number of new posts per day	VIP	Natural number	No comment
volume of web community audience			
Average number of visitors per day	VIUC	Natural number	No comment
Average number of direct visits per day	VIMC	Natural number	Without clicking on the hyperlinks (references), regular visitors.

The determination of parameter of intensity is an important element of tasks of the resource planning for information activities, in particular, with the use of imitation modeling and systems of mass service.

3. Socio-demographic characteristics and parameter of social relevance of virtual communities

Socio-demographic characteristics of virtual communities determine the manner of the audience that forms the community and proximity to the community task. Table 4 suggested parameters of the group are provided.

Table 4. Socio-demographic parameters of virtual communities (group VD)

Parameter	Denotation	Domain	Comment
Location	VDRg	Distribution by regions	The division into regions defined by catalog consumer
Age	VDAge	Distribution by age groups	No comment
Education	VDSL	Distribution by educational groups	No comment
Profession, specialty	VDWD	Distribution by specialty	No comment

Proximity measure of socio-demographic characteristics of a particular web community of thematic group of a set of values is an indicator of social relevance and serves as weight coefficient for important measure of virtual communities and generators of information image.

Control values based on core tasks of information activities within a certain web community group are formed by experts.

The list of community groups based on the main activities of higher education institutions with the projection of information activity is formed:
- o educational communication;
- o business (administrative) communication with students;
- o work with university entrants and marketing of educational services;
- o science communication and marketing of scientific results;
- o administrative activities and monitor the activities of staff;
- o economic activity;
- o social, cultural and sport activities.

The special benchmark set, which lies at the basis of determination of the proximity measure between particular virtual community and required virtual community, for each mentioned directions are formed. This benchmark set determines the social relevance of the web community. We use this parameter to determine the Euclidean distance measure.

Let $\overline{VD}^{(P)}$ is special benchmark set of socio-demographic characteristics for the direction of activity P and $Imp\left(VD^{(P)}\right)$ is importance feature of group VD for the direction P, besides that

$$\sum_{IMPx \in IMP\left(VD^{(P)}\right)} IMPx = 1 \text{ and } 0 \le IMPx \le 1, \ \forall IMPx \in IMP\left(VD^{(P)}\right) \tag{1}$$

Then the social relevance of i-th community in the direction P is defined as:

$$SocRel^{(P)}\left(VC_i\right) = 1 - \sqrt{\sum_{VDx \in VD^{(P)}} \frac{\rho^{(SR)}\left(VDx\left(VC_i\right), \overline{VDx}\right)^2}{Diameter^{(SR)}\left(VDx\right)^2} Imp\left(VDx^{(P)}\right)}, \tag{2}$$

where: $\text{Diameter}(\text{VDx})$ differences in attribute values VDx, $\text{Imp}(\text{VDx}^{(P)})$ is scaling factor for the features VDx in the direction of activity P, $\rho^{(SR)}(\text{VDx}(\text{VC}_i), \overline{\text{VDx}})$ is numerical measure of the difference between the feature for the community and control feature, distance between them. The function **Error! Bookmark not defined.** is formal function and according to the peculiarities of the arithmetic difference arithmetic difference is calculated. Let's consider this question in detail.

Each of the features are not scalar, but is enough complex objects, which can be described as the least the distribution of probability for a certain set of values. The description for features VDRg can be multilevel.

In this case, "difference of values" is a certain value that displays proximity of two objects (standard and real objects) of the same structure. This value according to the rules of a particular subject field is calculated. The definition of proximity measures is a scientific and applied problematic for social and marketing research and beyond the scope of this research.

If the community as a platform for information activities for multiple destinations as indicator of social relevance is considered than the highest of the parameters in directions is used for research:

$$\text{SocRel}(\text{VC}_i) = \max_{\{P_i\}} \left(\text{SocRel}^{(P_i)}(\text{VC}_i) \right), \tag{3}$$

where $\{P_i\}$ is set of all directions of activity.

It is important that the change of lists of directions of activity of higher educational institutions and socio-demographic characteristics does not conduct to change in the calculating method of social relevance parameter of virtual community.

4. Socio-demographic characteristics identification of virtual communities' members

The definition of parameters of socio-demographic characteristics of virtual community depends on socio-demographic characteristics identification (Peleschyshyn, et al. 2010; Fedushko & Bardyn, 2013) of virtual communities' members. In this case, the development of software for the socio-demographic profile (Fedushko, et al. 2013; Fedushko & Syerov, 2013; Syerov, et al. 2013) of web community members is necessary.

The design of subsystem operation of linguistic and communicative indicator sets formation (see Fig.1) is the first step of creation of a software complex of computer-linguistic analysis (Peleschyshyn & Fedushko, 2010) of socio-demographic characteristics of the web community members. The linguistic and communication indicators determine the community member belonging to a particular set of socio-demographic characteristics. Linguistic and communication indicators are the special feature of language and communication of online community member, which can be traced in his information track.
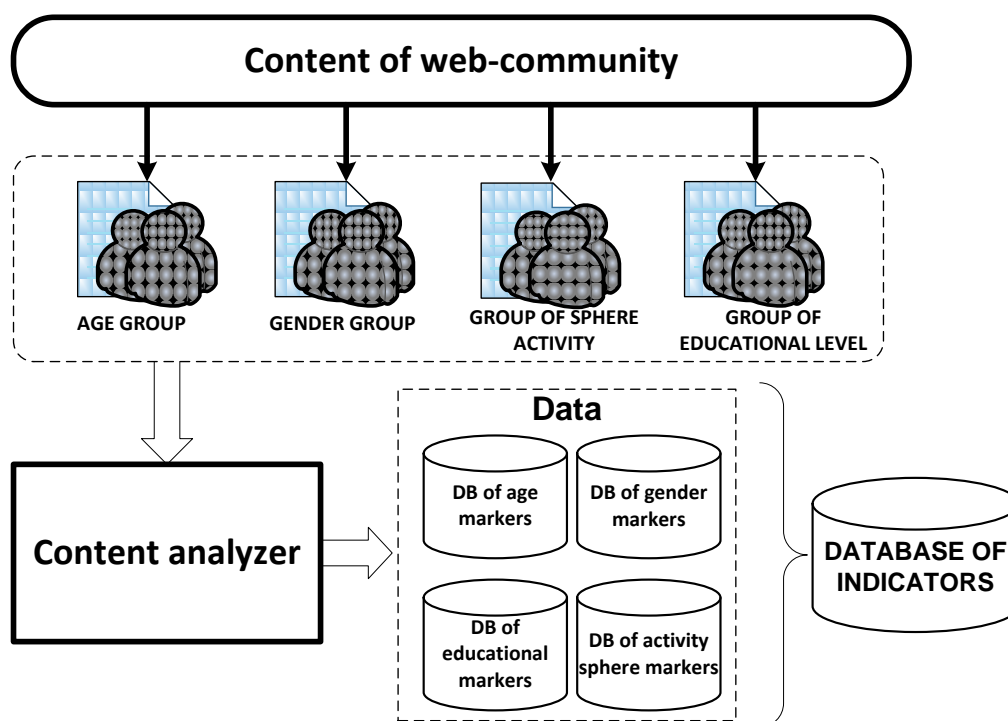
Figure 1. The scheme of the subsystem operation of linguistic and communicative indicator sets formation

This complex by forming socio-demographic profile of web community members based on the information model of construction of socio-demographic profile of the web community members for automation of the verification process of the array of the user content of the Web will be created in the next stage of investigation.

5. Communicative characteristics

Communicative characteristic rules and style of communication in virtual communities are described. Communicative characteristics are the basis of the applied methods of effective communication in web communities of various kinds, accordingly. These characteristics are divided into the following groups:
- o rules of registration and identification;
- o rules of placement of advertisements and marketing information;
- o linguistic characteristics; and
- o rhetorical manner.

Table 5. Communicative parameters of the virtual community (group VG)

Parameter	Denotation	Domain	Comment
rules of registration and identification			
Need to provide of personal data (Fedushko, 2010)	VGPD	{0,1}	No comment
Possibility of professional data presentation	VGWD	{0,1}	No comment
Use of single profile of social networks	VGSN	List of social networks	No comment
rules of placement of advertisements and marketing information			
The permission for advertising	VGAd	{0,1}	
The permission for information about the organization and announcement	VGN	{0,1}	No comment
The permission for link to its own information resources	VGSR	{0,1}	No comment
linguistic characteristics and rhetorical manner			
Working languages of the community	VGHL	List of languages	No comment
The general level of aggressiveness	VGAG	[0,1]	[non-aggressive…aggressive]
Availability deliberate Trolling	VGTR	[0,1]	[not available… predominant]
Rigidity moderation	VGMR	[0,1]	[moderated … unmoderated]
Use of obscene language	VGPC	{0,1}	There is a threat of compromising official representatives of Universities

In practice, the formalization of communicative parameters is an important element of the intellectualization of software and algorithmic means of information activities. Some parameters (VCMR, VCPC and so forth) should be used to formalize communicative procedures in aggressive environments. The characteristics of this group on two synthetic parameters are based: communicative value and communicative complexity that in determining the general importance of the web community is appropriate to use.

The parameter of communicative value indicates the level of profitability of the web community guidelines for higher educational institutions from the standpoint of active information activities. That is as far as improving on the informative image of the university is useful. For example, community, where posting links to their own resources is forbidden, it is less valuable than

similar community, where it is allowed. Taking into consideration a list of basic characteristics this parameter is defined as follows:

$$\text{ComUf}(\text{VC}_i) = \text{SocRel}(\text{VC}_i)(\text{VGPD}(\text{VC}_i)\text{VCU}^{(\text{VGPD})} + \text{VGSN}(\text{VC}_i)\text{VCU}^{(\text{VGSN})} +$$
$$+ \text{VGAd}(\text{VC}_i)\text{VCU}^{(\text{VGAd})} + \text{VGN}(\text{VC}_i)\text{VCU}^{(\text{VCN})} + \text{VGSR}(\text{VC}_i)\text{VCU}^{(\text{VGSR})}) \qquad (4)$$

where: $\text{VCU}^{(\text{VCPD})}$, $\text{VCU}^{(\text{VCSN})}$, $\text{VCU}^{(\text{VCAd})}$, $\text{VCU}^{(\text{VCN})}$, $\text{VCU}^{(\text{VCSR})}$ are relevant weighting coefficients for characteristics. Parameter of social relevance is multiplier for the weighted sum of characteristics.

The parameter of communicative complexity indicates the level of complexity and difficulty of basic communicative activities in the web community that is the level of communication difficulty with common to mankind level. High level of parameter indicates a potential threat to the communicator image. As a result, participation in such communities of representatives of higher educational institutions should be limited by a circle of people who have special psychological and rhetorical training. Accounting of such performers is a useful function of complex computer systems of information activity management.

Taking into consideration a list of basic characteristics, the parameter of communicative complexity is defined, it is as follows:

$$\text{ComCost}(\text{VC}_i) = \text{VGHL}(\text{VC}_i)\text{VCU}^{(\text{VGHL})} + \text{VGAG}(\text{VC}_i)\text{VCU}^{(\text{VGAG})} +$$
$$+ \text{VGTR}(\text{VC}_i)\text{VCU}^{(\text{VGTR})} + \text{VGMR}(\text{VC}_i)\text{VCU}^{(\text{VGMR})} \qquad (5)$$

where: $\text{VCU}^{(\text{VGHL})}$, $\text{VCU}^{(\text{VGAG})}$, $\text{VCU}^{(\text{VGTR})}$, $\text{VCU}^{(\text{VGMR})}$ are relevant weighting coefficients for characteristics, $\text{VGHL}(\text{VC}_i)$ is numerical function that reflects the complexity of the use of certain language. For parameter $\text{VGMR}(\text{VC}_i)$ is characteristic by inverse dependence of moderation level.

The parameter of communicative complexity is one of the components of a general parameter of the labor intensity of web community usage.

Peculiarities of virtual communities of educational thematic

The set of parameters that additionally characterize the virtual communities in comparison to traditional websites are considered. The formalization of these characteristics is the basis of unified information and mathematical models of a universal catalog of web communities.

However, in certain problem areas of web communities need to allocate additional characteristics that reflect their specificity.

Account and analysis of communities of educational profile is an important issue for the university. The separate tasks that arise in higher educational institutions the information activities in these communities are required.

Thus, complex of the basic characteristics of virtual community of educational direction *VCi* is described by a tuple:

$$VCS\_Ch(VC_i) = \langle VT(VC_i), VA(VC_i), VI(VC_i), VD(VC_i), VC(VC_i), VS(VC_i) \rangle \qquad (6)$$

where $VS(VC_i)$ is group of special characteristics for web educational community.

During this research, the education sector as an area of concern is investigated. The following subgroups of additional characteristics of web communities are selected:

- o educational profile;
- o problems of web community;
- o mode of web community;
- o associativity with educational institution.

Table 6 provides a list of suggested parameters in the work of special parameters of virtual communities of educational direction of groups that above are mentioned.

Table 6. Special parameters of educational direction virtual community (group VS)

Parameter	Denotation	Domain	Comment
Associativity with educational institution			
Technical service	VSTS	[0,1]	[without service ... full service]
Influence on policy of moderation	VSMP	[0,1]	[without impact … full impact]
Traffic exchange with an official website	VSTE	[0,1]	[not available ... integration into the navigation system website]
Presence of commitments of web community information support	VSIS	[0,1]	[not available … free and full information sharing]
Use of single account	VSCA	{0,1}	
Educational profile and problems of web community			
Educational level	VSSL	List of educational levels	
Community thematic	VSTh	List of thematic directions	Based for list of education directions
The main discussion problems	VSP	List of topics	"learning", "professional", "public", "entertaining", and so forth
The main tasks of members	VSMA	List of tasks	"informing", "search for partners", and so forth
The main motivation of owners	VSMM	List of motivations	"cooperation with an educational institution", "discrediting", and so forth

Parameter	Denotation	Domain	Comment
Mode of web community			
Treatment of education in general	VSLR	[0,1]	["friendly" … "aggressive"]
Treatment of educational institution	VSUR	[0,1]	["friendly" … "aggressive"]
Presence of negatively motivated members	VSAM	[0,1]	[not available … the vast majority]

Parameters (see Table 6) have a pronounced socio-communicative and humanitarian manner. Their incorporation into the formal model and architecture management of information activities of higher educational institutions allow to expand the possibilities for optimizing staffing process and quality control assignments. Some characteristics can be set by using computer-linguistic analysis of texts, in particular, software and algorithmic means of lexicographical analysis and sentiment analysis.

Mentioned parameters for modification of the parameters of communicative value and communicative complexity of taking into account peculiarities of virtual communities of educational direction and their topics and for determination of thematic relevancy of community to the meaningful directions of higher education institution's activity are used.

Let $\overline{VST}^{(T)}$ is special benchmark set of characteristics of account and problematic of community for direction of activity P and $Imp\left(VST^{(T)}\right)$ is importance features of group *VST* for thematic direction *Th*, besides that $\sum_{IMPx \in IMP\left(VST^{(Th)}\right)} IMPx = 1$ and $0 \leq IMPx \leq 1, \forall IMPx \in IMP\left(VST^{(Th)}\right)$.

Then, thematic relevance of *i*-th community in the thematic ***T***:

$$\text{ThRel}^{(Th)}\left(VC_i\right) = VSA\left(VC_i\right)\left(1 - \sqrt{\sum_{VDx \in VD^{(Th)}} \frac{\rho^{(TR)}\left(VSTx\left(VC_i\right), \overline{VSTx}\right)^2}{\text{Diameter}^{(TR)}\left(VSTx\right)^2} \text{Imp}\left(VSTx^{(Th)}\right)}\right), \qquad (7)$$

where: $\text{Diameter}^{(TR)}\left(VSTx\right)$ is differences in attribute values; $\rho\left(VSTx\left(VC_i\right), \overline{VSTx}\right)$ is numerical measure of the difference between the feature for the community and control feature, distance between them $VSTx$, $\text{Imp}\left(VSTx\right)$ is scaling factor for the features $VSTx$, $VSA\left(VC_i\right)$ is coefficient of associativity of web community of the university.

$$VSA(VC_i) = VSMP(VC_i)VSTE(VC_i)VSIS(VC_i)VSCA(VC_i) \qquad (8)$$

The function $\rho^{(TR)}\left(VSTx\left(VC_i\right), \overline{VSTx}\right)$ is defined as the distance between the formal semantic concepts or topics. To determine this distance it is advisable to use the theory of graphs, semantic analysis and fuzzy logic.

It is obvious that a considerable number of thematic directions for university are existed. These thematic directions the relevant set $\{Th_i\}$, which describes the whole complex of topics of

relevant information activity of higher education institutions, are formed. Then, as a parameter of thematic relevancy the greatest parameters for thematic is taken:

$$\text{ThRel}(\text{VC}_i) = \max_{\{\text{Th}_i\}}\left(\text{ThRel}^{(\text{Th})}(\text{VC}_i)\right). \tag{9}$$

Thematic relevance is specifying coefficient for determination communicative value. Thus, the communicative value of web community can be substantially reduced when thematic relevance is low. So, indicator of communicative value of the educational community $\text{ComUfE}(\text{VC}_i)$ by taking into account thematic relevance of virtual community is received.

$$\text{ComUfE}(\text{VC}_i) = \text{ComUf}(\text{VC}_i)\text{ThRel}(\text{VC}_i) \tag{10}$$

The parameter of the communicative complexity of the educational community based on correction of common communication complexity indicator considering the peculiarities of the educational community is formed.

$$\begin{aligned}\text{ComCost}(\text{VC}_i) = \text{VSL}(\text{VC}_i)(\text{VGHL}(\text{VC}_i)\text{VCU}^{(\text{VGHL})} + \text{VGAG}(\text{VC}_i)\text{VCU}^{(\text{VGAG})} + \\ + \text{VGTR}(\text{VC}_i)\text{VCU}^{(\text{VGTR})} + \text{VGMR}(\text{VC}_i)\text{VCU}^{(\text{VGMR})})\end{aligned} \tag{11}$$

where: $\text{VSL}(\text{VC}_i)$ is indicator of web community loyalty:

$$\text{VSL}(\text{VC}_i) = \text{VSLR}(\text{VC}_i)\text{VSUR}(\text{VC}_i)\text{VSAM}(\text{VC}_i) \tag{12}$$

The parameter of the communicative complexity of the educational community is one of the components of a general parameter of complexity of community usage of information activities implementation in higher educational institutions.

Conclusion

In our current work presents a new approach to developing the specialized catalog of virtual communities of educational thematic. Peculiarities of virtual communities' catalogs (technological parameters, quantitative parameters, socio-demographic characteristics and communicative characteristics) are formed. The result of the research is the method of socio-demographic characteristics identification of virtual communities' members. The topicality of the paper is determined by the necessity to formatting the formal model of peculiarities of virtual communities of educational thematic and architecture management of information activities of higher educational institutions. Some characteristics can be set by using computer-linguistic analysis of texts, in particular, software and algorithmic means of lexicographical analysis and sentiment analysis. In conclusion, this study provides a method of cataloging of virtual communities of educational direction and development of architecture and methods of organization of such catalog. This method is based on a formal model of virtual communities as an environment of information activity of the higher educational institutions. The formal models of internet-resources as an object of information activities mostly carried out in researches of internet-catalogs construction are formed.

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