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PROBLEMS OF DISTANCE COURSES MATERIALS EXPERTISE

The paper presents the urgency of the task of electronic learning material quality evaluation. There had been made the analysis of rationality of the known quality criteria of these materials and five of them, most valuable for future researches, had been selected. There had been analyzed the static and dynamic parameters, which may be obtained on the data of distance training system.

Key words: *distance training, quality criteria, quality of web-material, course material, distance training system, quality expertise.*

Introduction

Modern distance education is based on the usage of digital technologies, the most widespread of which is the use of opportunities of global net Internet.

Internet technologies enable to operate the specific forms of representation and organization of study information which allow to improve the level of its perception. They are:

- wide choice of information representation: text, drawing, audio, video etc.;

- possibility of non-linear organization of learning material, when the information units are represented not in linear sequence, but as the system of strictly determined possible transitions, connections between them, which allows to represent all the correlations of different aspects;

- availability of supplemental information which is in an additional, accompanying form, when the user percepts the main learning subject in connection with other ganglions, that is, any question is usually connected to other questions.

Growing number of distance education opportunities, commercialization of electronic distance courses causes the necessity of quality evaluation of learning materials. Criteria and methods of such evaluation have their own peculiarities which differ with the known quality evaluating methods for printed learning materials [1].

The task of evaluating quality of learning material in the distance education becomes more and more important. Unfortunately state standards and methods for quality evaluation of distance courses are absent in Ukraine. That is why the development of criteria and methods, which allow to solve this problem, become an important and necessary task.

Main criteria of web-materials quality expertise

Quality criteria of electronic data, web-materials may depend on context, in which they are used. Quality evaluation of electronic information is usually made in the context of material creation [2] and its further usage [3] by the group of experts. Both, the authors of the materials as well as site users, which, in turn, may be specialists-experts in the sphere the material belongs to, may act as experts. Information users, who may influence the quality of its evaluation, will be called experts below in this text.

Today the notion of information data quality includes its evaluation from the user's point of view. In 1997 there had been presented the concept which envisaged that data quality could not be evaluated independent of direct data users [4]. However the quality evaluation of web-materials by the users is a subjective or human one. It allows to state that the global net creates subjective or human opinions, in which something, that is of interest to one user, may find many adherents or be unclaimed by other users.

The existing quality evaluation criteria of web-materials are based on the criteria of information quality, which are suggested in [5, 6, 7], among which it is possible to single out the six main criteria: authority, exactness, objectivity, value, orientation, navigation.

Authority is determined by the qualification and professionalism of the author, style of materials presentation, level of users' confidence to the presented ideas. Information about the

author, his name, certificates, organization he works for, is usually given at the beginning or in the end of the paper. This information is the initial point for an expert while determining the level of confidence to the author.

Exactness – determines the level of data reliability, absence of mistakes, reliability of information sources, which are the basis of the material. The expert examines the availability of references to the information source and facts. The content of paper is examined as for the spelling errors, grammar mistakes, facts and presentation logic.

Objectivity contains level of objectivity, impartiality, equity of the presented material. The exactness of subject – matter determination, text plainness, lucidity in presentation of the set goals, which allow to determine the type of the site and potential audience shall be examined. This is the background for making a conclusion on the objective of the site creation.

Value is determined by the level of appropriateness and relevancy of information for making specific decisions. An expert also examines the availability of issuing date (topicality of the material), logicality of presentation and availability of conclusion after each section.

Orientation is determined by the level of availability of information or its accessibility speed. This criterion helps determine the target audience.

Navigation includes the facility of the access to the necessary information, intuitiveness of design. The expert examines the structuring and lay out of the hyperlinks, availability of hypertext content, correctness of spacing.

The above listed criteria are the aggregative and are positioned as the common criteria for evaluation of the web – materials. In case of evaluating the distance courses materials, most of them are redundant, which means the necessity of revision of appropriateness and rationality in using these criteria, adapts them to the task of evaluation of the learning material, and directly to the specific environment of distance training. It is also possible to introduce the new criteria, which are to be determined by the specificity of the problem under research.

Known methods for establishing criteria values

For storing the statistic data on web – material expertise on each of criteria, experts furnish information, which is presented in numerary value. Today there are some wide spread methods for data obtaining from experts, which can be divided into variants as for the type of their value.

Binary. Returns the result in the kind of the logic variable, which, as a rule, has three states: "Yes", "No", "Not determined".

Example of realization: http//www.office. microsoft.com/ru-ru/getstarted.

Discrete range of meaning. The result returns in the kink of the whole number, which belongs to the given range. For example, the evaluation of the material value on 5 score scale from 0 to 5. Value 0 corresponds of the inconsistent state.

The example of realization: http://www.ibm.com/developerworks/ru/library/.

Uninterrupted range of values. Returns the result according to the maximum possible value of criteria. Usually, real values are the results.

The example of realization: http://www.youtube.com.

Interface realization of meaning selection may have different solutions. For example, the meaning may be expressed through the selection of color in the gradation from red to green or through the selection of graphic primitive of emotional impression – "bad", "indifferent", "good". But with different realizations, the designers of expert systems try to minimize the number of actions which are to be done by the expert, to submit the values on the system.

Expertise criteria of material quality for distance courses

The main feature of material presentation in distance courses is that this process has to be done within the set access rights to the materials, which are provided by the platform for distance training. Materials are used by the specific groups of users; there is a strict difference in interests, needs, demand. Such materials, represented in the system are to be created according to certain

rules; they have regulated structure and standardization within the system. Considering the above, the significance of influence of previously mentioned criteria on the quality evaluation of distance courses material has to be revised.

Criteria Navigation on material will not be definite in the contest of functioning of distance training system, as navigation on materials is ensured by the system and is equal for all the courses.

Criteria Exactness and Objectivity from the model of 1999 may be united into one – Value, as they are connected with each other, characterize the content and objective of the represented material. In general, value of material is understood as the utility of the given information for future using, that is why the criteria value includes the criteria of exactness and objectivity.

Orientation of material in the given content means the final user of this information with his specific characteristics.

Criteria Authority is totally determined by the characteristics of author of course material.

As is mentioned in [8, 9,10], Representation and Volume are important aspects of information in electronic learning materials, since they significantly influence its comprehension by users. These aspects have to be taken into consideration as the additional quality criteria. Criteria Representation comprises the stylistic forming of course (clear and understandable explanation material: image, audio, video) author speech style, document structure etc.

Thus, it is possible to single out five criteria for evaluation of quality of distance courses materials: Authority, Value, Orientation, Representation and Volume.

Approach to expert evaluation in the distance training environment

To use the distance training system each expert has to enter the own registration information which will be of statistic character during the work with the system. The system will also generate specific statistic information on the expert (his rating, interests, activity of using the system, etc) which has the dynamic character in the process of system operation. The system for distance training also allows to control data which are common and coincide with other courses: number of unique viewing (hosts), total number of viewing (hits), belonging to specific speciality etc.

The above allows to affirm the existence of the possibility of receiving the evaluation for a part of criteria of material quality without the direct participation of the expert himself. Thus there appears a task of determining those static and dynamic parameters of the distance training system users, which allow automatically predict their evaluation on specific criteria.

Great number of static and dynamic parameters influence the values of evaluation criteria of material quality. All the static parameters are previously known, since the part of them directly belong to course user, that is an expert, and the other part of parameters is generated during the user's work with the material.

There had been made an analysis of static and dynamic parameters, which may be received in the distance training system. There had been analyzed their influence on selected criteria of quality material. The results of the analysis are given in the kind of diagram "mental map" [11], presented in fig 1.

In the process of evaluation of material quality it is necessary to single out four main essences: Student, Teacher, Course Material, Distance Training System. For each essence we single out those parameters which influence the evaluation of quality material and which can be fixed by the system for distance training.

Student - is the essence which directly uses the course material, processes it, makes conclusion on the content quality, i.e. perform the role of an expert knowingly or unknowingly. Let us determine the following characteristics: speciality, gender, course, age, family status, professional interests, framing rating.
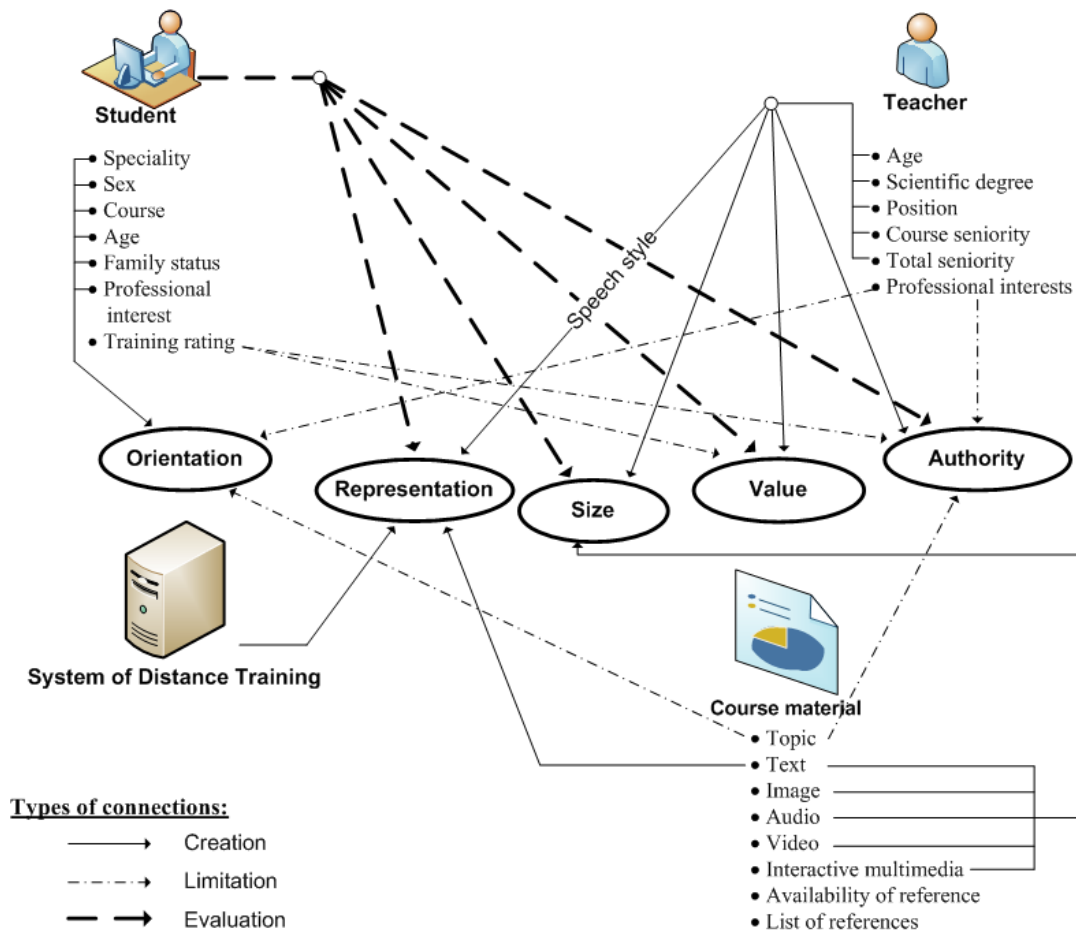
Fig. 1. Mental map of connections between the points of distance training process and evaluation criteria of training material quality

Teacher – the essence which creates and fills in the distance course. Its essential characteristics in the content of the set task are: age, scientific degree, position, period of course training, total length of service, professional interests.

Course material – essence which is being evaluated and which has some characteristics influencing its quality, namely:

text (availability of images, audio, video etc).

availability of references;

list of literature.

For the system of Distance Education the singling out of characteristics which influence the criteria does not make sense, since such characteristics equally influence all the materials of the course. But the main influence of the system on the quality of the material lies in their Representation to the users.

The above characteristics are connected with the criteria of quality. It is possible to single out three types of connection between the selected criteria and essences: Creation, Restriction and Evaluation.

The connection Creation means a connection, which allows the essence to influence the material quality evaluation, determine the initial, starting level of expert evaluation. Connection Restriction allows to narrow the sphere of possible states of expert evaluation following the values of the essence characteristics and determine the weight factors for the evaluation of current experts. Connection Evaluation determines the possibility to set evaluation following the specific criteria.

So, the characteristics speciality, course, age, family status, professional interests of the essence

Student influence mainly the definition of course Orientation, i.e. its direction and assignment. And the characteristic Rating of Training influences the values of criteria Authority and Value, i.e. an expert with the highest rating is able to better understand the essence of the represented material.

Characteristic of the essence of Teacher - age, scientific degree, position, course experience, seniority, sex – determine the Authority of the material, which is based on the scientific experience of the author. The Author by the style of his speech, aesthetics opinion determine the criteria of Representation during the creation of the course. Scientific and pedagogic experience of the author influence the Value of the material, its exactness and objectivity and the size of the represented information – the Volume of material.

Essence characteristics Course Material determine the value of the criteria Volume and stylistic styling – value of the criteria Representation of the material.

Consideration of the suggested criteria allows to formulate the main dimensions of a new way for conducting expert evaluation under the environment of distance education.

Expert evaluation of material quality for distance courses is made by users themselves (experts) following the definite number of criteria in the process of information using.

Duration of the evaluation process is determined by the duration of access to the material for experts.

The value of the expert evaluation changes dynamically during the process of evaluation. Its objectivity increases with the increase of experts.

Each evaluation on each criterion has the initial value which is determined by creation connections and which may be changed in the course of evaluation.

Range of possible evaluation values on specific criteria may be minimized at the cost of influence of essence characteristics through the connections of restrictions.

With the sufficient number of essence characteristics, connections of creation and connections of restrictions, the value of evaluation on corresponding criteria may be determined automatically without the expert interference.

The above approach and dimensions allow to automate the process of quality evaluation of e – materials by building models of influence of essence characteristics on the evaluation results, development of intellectual algorithms and appropriate software for processing relations between them.

Conclusions

There had been suggested the new approach to the problem of evaluation of quality of distance courses. There had been suggested quality criteria for distance course material as well as method for obtaining the evaluation value on the criteria data, which enables to automate the quality of expertise. There had been developed the mental map of connections between the essence of the process of distance education and the evaluations of quality criteria of study material. The results of the given work will be used for the development of the automated intellectual expert system.

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