

the procedural component of teachers' media competence, its level is a bit lower than this on two other components (75% of teachers showed high level on this component and 23% – average level), what indicates the need for further improvement of practice-oriented procedural knowledge and skills of using media technologies in professional activity.

The effectiveness of experimental work on development of teachers' media competence in the distance learning environment was confirmed basing on an increased level of the following indicators: level of knowledge about the essence of media technologies, their meaning and role in the society; creative approach to the process of making media texts; ability to analyze complicated processes of media' functioning; knowledge about methods of designing lessons and educative events using media tools; knowledge of the main notions and terminology of media education; skills in selecting content and methods of learning and educative activity, based on the use of media; assuring the variety of learning and educative content based on the means of media; ability to manage the subject position of learner basing on the means of media; interest to the professionally relevant knowledge and need for its obtainment using media; need for information enrichment through the means of media etc.

To conclude, the process of developing teachers' media competence in the distance learning environment presupposed design and implementation of the following interconnected stages: preparatory, theoretical and practical, with the leading role of the distance learning course «Development of teacher's media competence», as well as didactic games, trainings, forums, counseling, use of the specialized informational learning portal of the Resource center (Ust-Kamenogorsk).

#### References

1. Conception of education development in the Republic of Kazakhstan till 2015. – Astana, 2005.
2. State education development program in the Republic of Kazakhstan till 2020.
3. Friesen N., Hug T. The Mediatic Turn: Exploring Consequences for Media Pedagogy. In K. Lundby (Ed.). *Mediatization: Concept, Changes, Consequences*. – New York: Peter Lang, 2009. – P. 64–81.
4. Hug T. Medienpädagogik – Begriffe, Konzeptionen, Perspektiven. In G. Rusch (Ed.), *Einführung in die Medienwissenschaften*. – Opladen: Westdeutscher Verlag, 2002. – P. 189–207.
5. Nurgalieva G.K., Tazhigulova, A.I. Methodology and technology of secondary education informatization. – Almaty, 2008.
6. Robert I.V. Modern information technologies in the education: didactic problems, perspectives of use. – M.: School news, 1994.
7. Polat E.S. *Distance Learning*. – M., 1998.
8. Bondareva S.G. Modern information technologies in the system of higher education. – *Ust-Kamenogorsk*, 2007.
9. Adolf V.A. Professional competence of a modern teacher: monography. – Krasnoyarsk, 1998.
10. Fercho S.I. Development of teachers' professional competence of using electronic learning editions in learning process. – Almaty, 2004.
11. Bajchonova S.Z. Organizational pedagogical conditions of pedagogues' professional competence development in the process of further professional training. – Astana, 2007.
12. Zhajtapova A.A. Scientific methodological support of teachers' professional growth on the stage of transition to the performance-oriented educational model. – Almaty: RIPKSO, 2004.
13. Zhadrina M.Z. Orientation on performance as a condition of competence approach realization in school. – Almaty, 2004.
14. Fedorov A.V. Specifics of media education of pedagogic universities' students // *Pedagogy*. – 2004. – № 4. – P. 43–51.

The work is submitted to the International Scientific Conference «Science and education integration», Maldives Islands, February, 15–22, 2013, came to the editorial office on 11.01.2013.

#### ON THE MEDICAL LABORATORY TECHNICIANS' OCCUPATIONAL COMPETENCES FORMATION WAYS THROUGH THE CASE – METHOD USE

Zhadnova E.V.

*The Medical College № 1, Volgograd,  
e-mail: zhadnova.irina@mail.ru*

In the recent years, the search for the new efficient and the spectacular teaching methods has been become especially important and the most actual, in connection with the Russian education modernization course, the secondary vocational education new Federal Government standards introduction, which are laid, as the outcome learning quality, having generated the graduates' general and the vocational competence.

In this connection, the case – method has been drawn our attention, the distinguishing feature and its peculiarity of which are the challenge situation creation, on the basis of the real vocational practice factors. So, the case – method efficient use by the teacher in his teaching practice, due to the principles series implementation: the didactic arsenal diversity and its efficiency; the partnership, and the cooperation with the students; the teacher's role to offset the knowledge translation to their getting process organization, his role constant increasing, as the expert and the consultant; the pragmatism, having driven and oriented by the features and the peculiarities possibilities clear definition of this or that particular case.

The training and the evaluation cases studies differences have already been revealed at the technology creation, the main requirement for the goals, for the objectives, for the content, and for the structure cases have already been developed, especially for each type. So, the special training

specific situations, having prepared by us, have been specially designed and further created, on the basis of the factual material data, for the purpose of the subsequent analysis at the studies, and in the classes. So, the technology has been involved the constant – increasingly complex cases system use, in which the tasks – enquiries for the further addressing and the discussion – are being reflected the emerging vocational competences dynamics. So, in the case study analysis – in the addressing cases, the students are being taught to be acted in «the team», to be made the final analysis, and to be made the correct decisions. Thus, the appropriate methodological support has been supported for each technology realization stage.

We have already developed the method applying technique of the specific situations or the case – method, its further implementation into the educa-

tion process is quite able to be strengthened the practical orientation of the medical laboratory technicians' vocational training, and also to be set the inverse relationship between the future professionals', experts', and specialists' theoretical considerations, the regulations, and the occupational actions.

Moreover, we suppose, that the occupational competences efficient formation in the medical laboratory technologists training is quite be able to be achieved, if the case – technology use will be by the system – forming component in the students' learning and the training activities.

---

The work is submitted to the International Scientific Conference «Modern problems of science and education», Russia (Moscow), February, 26-28, 2013, came to the editorial office on 04.02.2013.

# SOME ASPECTS OF LANGUAGE MODEL IN INFORMATION THEORY

<sup>1</sup>Ospanova B.R., <sup>2</sup>Kazhikenova S.S.

<sup>1</sup>Karaganda State Technical University, Karaganda, e-mail: o.b.r@mail.ru;

<sup>2</sup>Karaganda State University n.a. E.A. Buketov, Karaganda, e-mail: sauleshka555@mail.ru

In the article there are presented some aspects of theoretic-and-experimental approach to evaluation of Russian and Kazakh texts entropy. The methodology suggested is based on the system, multilevel approach to building a complicated hierarchic system of a language.

**Keywords:** linguistics, entropy, information theory, ordering, scientific text, self-organization

Studying a language by the methods of information theory became a prospective scientific trend investigating complicated systems from the point of view of the self-organization processes taking place in them. Within the limits of this trend there takes place the modeling of a language as a complicated, dynamic, self-organizing system from the disordered state to the ordered one.

When determining the quantity of information there is considered a language text which consists of letters, words, word combinations, sentences, etc. Each letter occurrence is described as a sequential realization of a certain system. The quantity of information represented by the letter indicated is equal in its absolute value to the entropy (uncertainty) which characterized the system of possible choices and which was eliminated as a result of a certain letter selection.

It's known that in order to evaluate entropy it is necessary to have a complete distribution of possible combinations probabilities. Therefore, in order to evaluate entropy of a letter it is necessary to know probabilities of every possible letter occurrence.

**Research objective.** Our research is conditioned by the necessity to study the text material of various genres with the aim of its improving. Any text is to be formed correctly in style, grammar, syntax, without linguistic mistakes. By means of using mathematical calculations we obtained the values of a letter entropy taking into account one, two, three, four, five or six letters of a text in the Russian and Kazakh languages.

We suggest an ideal model for analyzing the text structure. It is built based on the fundamental law of preserving the sum of information and entropy using Shannon's formula.

In the general characteristic of the text entropic-information (entropy is a measure of disorder, information is a measure of eliminating disorder) analysis we used Shannon's statistical formula to determine the text perfection, harmony:

$$H = -\sum_{i=1}^N p_i \log_2 p_i, \quad (1)$$

where  $p_i$  is probability of detecting a uniform system element in their set  $N$ ;  $\sum_{i=1}^N p_i = 1$ ,  $p_i \geq 0$   $i = 1, 2, \dots, N$ .

Before publishing Shannon's theory, Hartley suggested to determine the maximum entropy quantity by the formula:

$$H_{\max} = \log_2 N. \quad (2)$$

Studies in the field of information theory are of a great interest. For linguistics an important measure is the language entropy. It is a general measure of probabilistic-linguistic ties in the given language text. In this connection we carry out a comparison of the data characterizing a numerical evaluation of these measures in the Kazakh and Russian languages.

As the Russian alphabet contains 32 letters (31 letters, one blank), according to this result

$$H_0 = \log 32 = 5 \text{ bits.}$$

$H_0$  is the maximum value of the text entropy contained in receiving one letter of the Russian text (information contained in one letter) under the condition that all the letters are considered **equally probable**.

Bit is a unit of measuring information.

The Kazakh alphabet contains 43 letters (42 letters, one blank), so according to this result,

$$M \frac{\log 43}{\log m} = M \frac{H_0}{\log m}.$$

Here  $H_0 = \log 43 = 5,4$  bits.

– the entropy of experience consisting in receiving one letter of the Kazakh text (information contained in one letter) under the condition that all the letters are considered **equally probable**.

Here we are to note that the present day Kazakh Cyrillic alphabet is used in Kazakhstan and Mongolia. In adopted in 1940 alphabet developed by S.A. Amanzholov, there are 42 letters; 33 of them are from the Russian alphabet and 9 are specific letters of the Kazakh language: **Ә, Ғ, Қ, Һ, Ө, Ұ, Ү, Һ, І**. Initially the Kazakh letters were placed after the letters of the Russian alphabet, then each of them was placed after the Russian letters similar in pronunciation. The following letters: **ә, ё** (since 1957), **ф, х, Һ, Ү, Ұ, Ү, Ү, Ү, Ү** are not used in purely Kazakh words. The letters **ё, Ү, Ұ, Ү**,