
Техническое и кадровое обеспечение инновационных технологий в сельском хозяйстве

9. Animals: control and modification

Cattle no longer wear bells around their necks — they have been replaced by smart sensors. One such example is Smartbell, which tracks the animal's motor activity and transmits the data to the cloud storage. Motion sensors also let you know if the cow is ready for insemination.

Some devices are installed directly in the first compartment of the stomach — the so-called seam where the measure of acidity and diagnostirovat problems with the gastrointestinal tract.

Scientists also use genetic modification to make animals safer. For example, output Holstein cows without horns. Gene modification is also used to make pigs immune to African swine flu.

10. There are fewer and fewer Farmers

But the main sign of progress is the fact that fewer people are working with the land today. Their work is now performed by special agricultural machinery, fertilizer agrochemicals and spreading systems, robots, drones and other devices.

In 1900, 41% of the labor force in America worked on farms, and today this figure is only 2%. And gradually this trend is coming to other countries, even third world countries.

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**TESTS IN TEACHING FOREIGN LANGUAGES TO STUDENTS
OF AGRO-TECHNICAL SPECIALTIES****Sysova N.V.**

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The process of teaching a foreign language to students of agro-technical specialties, regardless of their level of foreign language proficiency, involves the formation of the ability sufficient to use the language. The level of knowledge of a foreign language is determined in the process and as a result of testing appropriate skills.

Tests are one of the most technologically advanced methods for conducting automated control and thus they are actively used in training future engineers to foreign professional communication.

The process of creating tests is one of the most complex and not completely solved problems in testology. It is difficult because it includes the construction of the test as integrity, and the construction of test tasks, including various types of tasks the test consists of.

In higher educational institution “Belarusian state agrarian and technical university” (BSATU) the process of test creation to evaluate students’ knowledge is based on a tiered approach and logically integrates with the modular and rating educational system adopted at the university. According to the tiered approach, the test is constructed in accordance with the educational element of the module, taking into account its content and with a given goal, which is the level of assimilation of activity (knowledge and skills), i.e. in order to identify each level of assimilation of the educational element, an appropriate test should be created. It is called criterion-oriented testing.

The classification of criterion-oriented tests proposed by V.P. Bespalko is based on the rule described above, which is similar to the classification of levels of assimilation and is characterized by the way to perform the required actions.

1st level: actions with a hint. Recognition activities of previously studied material (identification tests; differentiation tests; classification tests).

2nd level: actions by memory. Reproduction activities (substitution tests; tests-copies (constructive); tests - typical tasks).

3d level: activity in a non-standard situation. Heuristic activity (subjectively new information is obtained) – tests – non-standard tasks.

4th level: research. Creative level (objectively new information is obtained) – tests-problems [1].

It should be noted that when compiling tests, the rule for compiling the test given above should be supplemented with the following provision, e. i. each level of assimilation corresponds to its own types of various test tasks used to compile this test.

Let us discuss in details the types and forms of tasks related to levels 1-3, which are most applicable while teaching a foreign language to students of agro-technical specialties of BSATU.

1st level of assimilation is recognition. To control the quality of mastering this level the teachers use alternative test tasks, distinguishing tasks (with multiple choice), tasks to establish compliance and tasks to establish the correct sequence.

These tasks allow checking the activity of comparison, correlation, differentiation and recognition and belong to the closed form. They should include instructions for their implementation; the question part, i.e. the basics of the test task; the response part.

Here is an example of a distinguishing task (with multiple choice):

Read the sentences attentively and choose the correct variant.

1. Electricity network in Europe is largely

a) *useless* b) *available* c) *unreliable* d) *interwoven*

2. The milking machine is one of the most important ... of electricity to agriculture.

a) *applications* b) *generations* c) *fields* d) *objects*

2nd and 3rd levels of assimilation deal with reproduction based on the understanding and application of knowledge in a familiar situation. Tasks of these levels test the ability of students of agro-technical specialties to produce and use lexical and grammatical forms in a specific context for a specific purpose. This group of test tasks includes close-tests, tests for filling in gaps, tests for transforming syntactic structures, tests for reorganizing syntactic structures.

Gap-filling or Modified close-tests mean that certain words are removed. These tests may be of two types. To test the ability of students of agro-technical specialties to recognize language forms in order to use them to fill in the gaps, we use the first type of gap-filling close-test: students are offered a list of words from which they can choose a suitable word. The second type of the test is more productive: the students are asked to fill in the blanks, but the list of words from which the students should choose the missing word is not given. You can also ask the students to find the place of the gap themselves and insert the missing word. However, the tasks of the second type may present some difficulties for most students of agro-technical higher educational institutions.

Here is an example of the first type gap-filling test:

Fill in the gaps using the words given below. Each word can be used only once. Pay attention that there is one odd word out.

basic application knowledge scientific

1. Agricultural engineering means the application of engineering ... to agriculture.

2. The agricultural engineer must understand that there are ... differences between agriculture and other industries.

3. The biological factor is an important one in engineering ... , and the engineer must know well the basic principles and practices of agriculture

To test lexical skills to build syntactically correct sentences, students of agro-technical specialties are offered to complete test tasks for the rearrangement of syntactic structures.

Here is an example of this type of test task:

Put the words in the right order to make complete sentences.

1. electric // used // to run // labour // in turn // motors //requirements //electricity is // to reduce.

In conclusion it should be noted that tests serve as an important criterion for both teachers' and students' achievements, checking not only what has been taught in class but also what students have managed to learn. Therefore final achievement tests should be based on course objectives and should not involve an element of surprise or novelty for students as their goal is to evaluate students' acquired knowledge and expertise in the course and hence how successful the course has been in accomplishing its objectives. [3] When compiling tests as an integral set of tasks teachers should pay attention to the types and forms of test tasks, their advantages and disadvantages.

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**THEORETICAL APPROACHES OF MOVING AWAY FROM A
BUREAUCRATIC STRUCTURE TO ONE BASED ON «SELF-ORGANISATION»
IN THE AGROINDUSTRIAL COMPLEX OF THE REPUBLIC OF KAZAKHSTAN**

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The bureaucracy may become a barrier for further growth at certain point of development for an agricultural company (Birkinshaw et al. 2015). For instance, according to Greiner's model of organizational growth the crisis of bureaucracy may arise after growth through delegation (Mimbang 2015). The main reason for that is at certain point of a venture growth it is more reasonable for the higher management class to focus on strategy solely instead of micromanagement (Camillus 1986). Therefore, daily routine management is delegated to other specialists which usually may create additional hierarchical layers (Kapeleris et al. 2006). However, delegation may not always run smoothly (Birkinshaw et al. 2015, Camillus 1986, Kapeleris et al. 2006, Mimbang 2015):

- not every higher management team member may agree to give up micromanagement;
- not all middle level management team members may have adequate training;
- growth in organisational size may put pressure on policies on communication channels.

As a result, all of the mentioned factors may arise the issue of improving how different parts of a venture is working together (Kapeleris et al. 2006). Therefore, new policies and procedures to follow are introduced to make structures of different business divisions less chaotic (Birkinshaw et al. 2015, Camillus 1986). In the beginning the growth through coordination may go more or less stable (Birkinshaw et al. 2015, Mimbang 2015). However, through certain time period bureaucracy may start impacting every single division (Birkinshaw et al. 2015, Kapeleris et al. 2006,). For instance, the head office may in order to control larger scope of organisations may introduce new policies, management systems and formal and informal procedures (Camillus 1986, Mimbang 2015). As a result, at certain point when bureaucracy takes over too much control over an organisation, it becomes a burden for further growth of an enterprise (Birkinshaw et al. 2015, Camillus 1986, Kapeleris et al. 2006, Mimbang 2015). Therefore, according to Greiner's model bureaucracy is substituted with collaboration (Kapeleris et al. 2006, Mimbang 2015). According to some researchers collaboration is also known as self-organisation or self-management. Self-organisation basis on leaders making decisions based on emotional intelligence and adequate judgement rather instead of rigid and formal system of controls and procedures (Birkinshaw et al. 2015, Kapeleris et al. 2006, Mimbang 2015). Self-management moves away from strictly following bureaucratic systems of control towards more agile systems that offer more flexibility (Camillus 1986, Mimbang 2015).

There are several approaches that can be used to implement changes from bureaucratic structure to more flexible one. Applying PDCA framework seems to be among adequate tools that can be used for describing how to shift organisation structure from the bureaucratic structure to the self-management. The main reasons is that PDCA framework describes the process of implementing changes fully and can be used continuously over and over again (Burnes 2014).