

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
ФАКУЛЬТЕТ ІНОЗЕМНОЇ ФІЛОЛОГІЇ  
ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ**



**СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ  
РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА**

**МАТЕРІАЛИ ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ ВИКЛАДАЧІВ,  
АСПІРАНТІВ, СПІВРОБІТНИКІВ ТА СТУДЕНТІВ**

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implemented through the Google cloud services. Besides, the authors stated that if the clouds' providers use the virtualization technologies, then the machines will be able to share the physical resources among multiple virtual machines belonging to different users. Concomitant use of resources contributes to the efficiency of the cloud-based IT infrastructure and reduces maintenance costs. This provision cloud services will be able to implement according to one of the business models – pay as consumption (Pay as you go) subscription or reserved resources (Reservation Pool). Thus, the system management cloud should provide the quality of service cloud customers and maximizing the use of resources put into operation.

It's necessary to underline, that the practical value of the cloud computing results in the creation of the instruments to prevent from performance degradation in the virtual machine optimization of the energy consumption and the proper service maintenance for cloud services' users. Thus, the results of the physical simulation proved the effectiveness of this approach. Moreover, this approach gives opportunity to receive the training matrix for decision rules.

## GAME THEORY

K. Novak, *group F-41*  
(*Sumy State University*),

O. R. Gladchenko, *EL Adviser*  
(*Sumy State University*)

Game theory is a section of applied mathematics that studies various mathematical models of optimal decision making in conflict situations. J. Von Neumann and O. Monhenshternom in 1944 wrote the work "Theory of Games and Economic Behavior." From the very beginning of its development, it was aimed at solving economic problems. Later it began to be applied in other areas related to the conflict. Theoretical and playing methods of optimal solutions are widely used in medicine, in economic and social planning and forecasting, and other matters of science and technology. Today, the game theory is widely used in various sciences such as economic, political, computer, social, etc. Game theory attempts to identify strategic behavior in different situations mathematically in which success is the subject of the decision-making and depends on the moves of other players.

Game theory is also used in economics and management. Mathematical models of this theory became the basis for the creation of

modern theories of international trade, taxation, social benefits, monetary economics, industrial organization theory.

Games have several classifications dependently on different grounds. There Cooperative (players can join) and non-cooperative (each is playing himself), zero (one wins, others lose) and non-zero-sum (if one player wins this does not necessarily mean that the other loses, and vice versa), parallel (all players make progress at the same time, or they are unaware of the moves of other players until everybody will not make his move) and sequential (players can make moves in a certain order, and they have some information about the moves of others), with complete and incomplete information, discrete (finite number of players, events, marches, results, etc.) and continuous.

To find solutions for the game in normal form when all players make decisions at the same time and are unaware of the decisions of others, one of the following methods is used: balance method, Nash equilibrium, Pareto efficiency, Stackelberg balance, the method of mixed strategies .

And a play in a dynamic form is the game in which players perform consistently and have some awareness of the moves of other players using the theorem of Kuhn, the method of inverse induction or sub-game perfect Nash equilibrium.

The use of game theory has certain limitations. There are situations in the economy when their use is possible only if additional information exists:

1. Players have different ideas about games and opportunities for each other.
2. The severity of its use in a large number of equilibrium situations.
3. Failure to choose the best options in complicated situations making strategic decisions.
4. With increasing stages (10 and over) using algorithms and continuation of the game from the equilibrium strategies becomes impossible.

But in any of these situations, participants play with "common knowledge": all players have information about the game and its rules, all players know that we know their partners. This situation is in place before the end of the game.

Game theory today has a broad line of applications. It includes mathematical models of tenders and auctions (on the micro level); production behavior and the internal behavior of firms on the level of production (on the intermediate level of the economy); models of competition, trade policy and monetary policy (on the macro level). Thus,

the practical value of game theory in economics and management is increasing in recent years. They are used as an opportunity to implement the most rational choice under conditions of alternatives to make informed decisions about whether to use the existing strategies for the analysis of strategic issues.

## **COOPERATIVE LEARNING IS A GATEWAY TO FACILITATE ALTERNATIVE ASSESSMENT**

I.A.Bashlak, *a senior teacher of foreign  
languages department*

Alternative assessment is extremely useful in gathering evidence concerning the way learners approach, process, and complete real life tasks in the target language.

Different tags such as *performance*, *authentic*, *informal*, and *situated*, have been used to describe alternative assessment. Despite the different tags, what is common among these types of assessment is that they have nothing to do the traditional testing criteria of objectivity, machine scorability, standardization, or cost effectiveness.

Alternative assessment uses a wide variety of formats, such as checklists, journals, reading logs, portfolios, videos of role-plays, audio-tapes of discussions, self-evaluation questionnaires, teacher observations, and anecdotal records to assess the performance of students. These formats show what the students can actually do rather than what they are able to recall. Alternative assessment reflects the curriculum being taught and provides information on the strong and weak points of each student. Furthermore, it provides a great number of ways to determine the progress of students and can be more culturally sensitive and free of the linguistic and cultural biases typical of traditional testing .

Alternative assessment is closely connected with classroom instruction. It does not require a separate block of time to be administered because it is based on day-to-day instructional activities., Ultimately alternative assessment provides valid and reliable documentation of students' achievement and progress. This is because it utilizes various