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Integration of Business Game for improving Literacy of Accounting Information Systems

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Abstract

The analysis of results of the exam session of students studying Business Administration in Kaunas University of Technology did show relatively low marks in accounting related modules. Thus, more attention should be given to use of accounting information systems. The analyses results of exams show difficulties integrated systemically understanding accounting, accounting information systems and relation with business basics. The main purpose of the paper is to create the tool for teaching integrated business information systems also improving teaching and learning of accounting information systems. A survey of the students has been performed, asking what improvements of business game (including further integration with other tools) they would consider useful. Integrated use of a system of tools (including business game, database management system, accounting information system and Geographical Information Systems) was proposed and tried out in the study process.

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Introduction

The analyses of publications related with using business games (BG) in study process show big number of games, but it was difficult to find BG related with real existing accounting information system. M. Wardaszko (2014) noticed the problem related with students good understanding separate subject like accounting, information system, management, but it is difficult for them integrate knowledge from different subjects strong related in real life. J. Mulenga & M. Wardaszko (2014), I. Patasiene et al. (2014), S. Geithner, D. Menzel & S. Donath (2014)

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suggested using their BG in two or more separate study modules. There are very few business games related with simulation of accounting information systems, which is used for planning and control systems of business (Bertei & Marchi, 2014). Accounting system request big job for enter data. It takes a lot of time. That is the main reason, why researchers don't like to simulate accounting system, when simulation period continues long time (for example, five years). There are several games that are used to teach accounting (Nitkin, 2011). Most part of authors of BG take into account multiple learning domains following Bloom's taxonomy and stipulate different levels of learning capturing cognition, effect and behavior (Mulenga & Wardaszko, 2014). So, authors are looking for two sources of methodology and inspiration for creating a framework of teaching and learning (Mulenga & Wardaszko, 2014). BGs are the tools that meet the requirements of Bloom's taxonomy. Thus, it seems reasonable to expect that it is possible to create an attractive tool that would meet requirements for teaching and learning. It will help us to achieve the *main purpose of the paper*: to adapt the business game "Hard Nut" as a tool for teaching and learning introduction to business and accounting literacy using real popular accounting information system PRAGMA. Games can be compared via deconstructing their architecture into basic components and the way they are linked to each other (Klabbers, 2014). Discussing about future of gaming for design of complex systems it is very important to remember that real situations usually are too complex for learner to understand, but teacher it is free to use real data or real system (Meijer et al., 2014; Lainema & Makkonen, 2003; Lawson et al., 2014).

1. Methods

In order to find out the effectiveness of use of business game in the study process, a survey was prepared. Students were asked about effectiveness of business game in gaining of knowledge of business-related topics and IT skills, priority of possible improvements of business game. First and second year students of Kaunas university of technology ("Business administration" and "Leadership" study programs) participated in survey. The sample included 27 students, Students were asked to ask some questions and answers in five point scale. Fig. 1 shows average of opinion of students to different questions. It is easy to notice that opinion of first year and second year students are differed. It can be explained by change of perception of understanding.

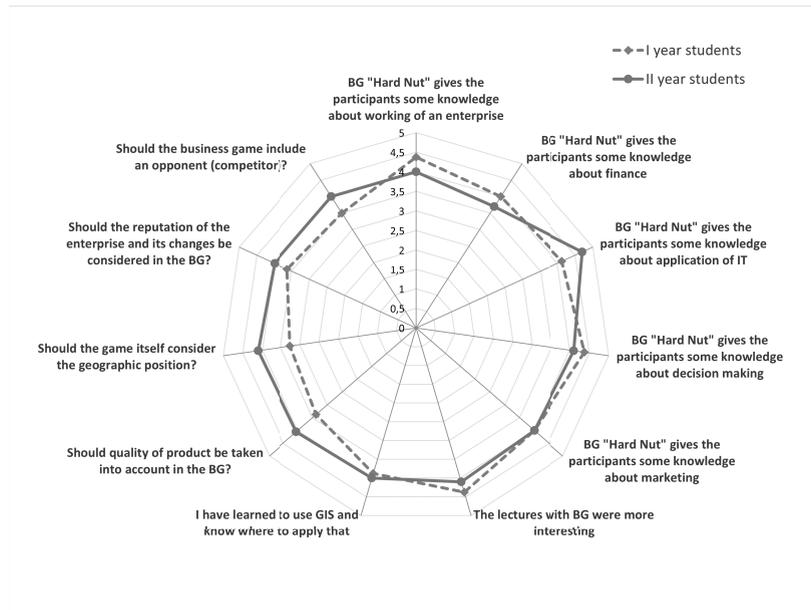


Fig. 1. Summarizing opinion of respondents after running the business game "Hard Nut".

Analysis scientific literature and statistical analysis of opinion of students encourage us to design model for integration popular accounting information system in playing business game “Hard Nut”.

2. Results

Normally, the players get full reports (balance, income statement etc.) describing the state of their enterprise after each financial year.

In the proposed version of the game (Fig. 2), the users would only get shortened forms, giving just the basic variables (for example, the number of products that was actually sold). They would have to prepare the actual financial reports themselves. Decisions would have to be based on those reports. That would encourage the players to use the computerized accounting system “PRAGMA”.

The extended version of the reports prepared by business game itself would have to be made available to the players during the debriefing phase, in order to make the mistakes more obvious. The influence of those mistakes can be expected to be rather clear, given the results of the game.

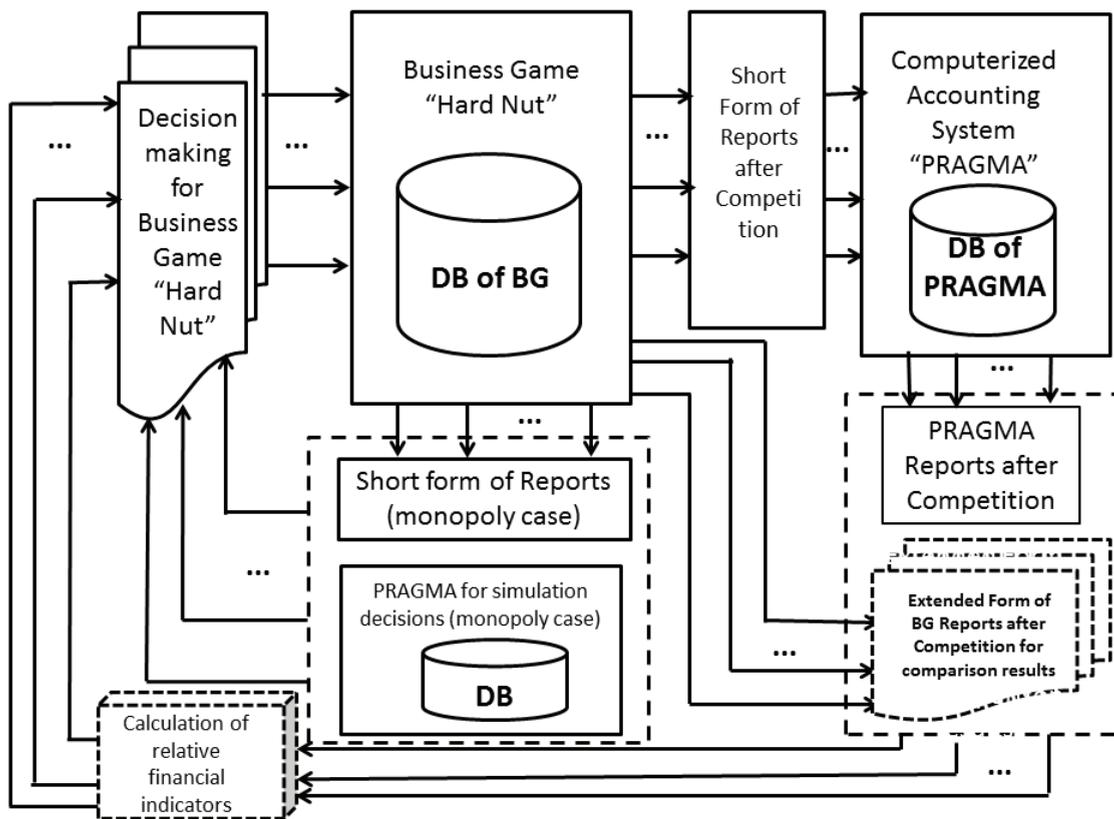


Fig. 2. The model of integrated use of business game “Hard Nut” with accounting information system “PRAGMA”.

Such process is made harder because “PRAGMA” (and many analogous systems) does not support storage of historical data. However, such data would make further analysis (like use of financial ratios) possible.

Welcome, Eglė Krašinskaitė. You are 'direktorius finansams' of this enterprise.

Common decisions:

Increase of capital

Dividends

Loan by main enterprise

Repayment of loan

Purchase of pieces of equipment

Sale of old pieces of equipment

Hiring of workers

Firing of workers

Hiring of temporary workers

Firing of temporary workers

Salary index

Social budget

Hiring of sales representatives

Firing sales representatives

Production and sales:

	Kaitra-150	Kaitra-200
To produce, units	<input type="text" value="2070"/>	<input type="text" value="0"/>
Supplier credit, in days	<input type="text" value="0"/>	<input type="text" value="0"/>
Price	<input type="text" value="3800"/>	<input type="text" value="0"/>
Advertising expenses	<input type="text" value="60000"/>	<input type="text" value="0"/>
Credit for buyers, in days	<input type="text" value="15"/>	<input type="text" value="0"/>
To be sold	<input type="text" value="2070"/>	<input type="text" value="0"/>

Market research:

Demand

Competition

Marketing

The screenshot shows the PRAGMA software interface for a transaction entry. The window title is 'PRAGMA (20140415) (EUR) < Šita Tau, šita ir man > Išlaidos už prekes per banką'. The form includes fields for 'Dok. Nr.' (MP0002), 'Data' (2015.01.01), 'Klientas' (Tiekėja pirmas), and 'Statusas' (Patvirtintas). It also shows a table with columns for 'Standart.koresp.', 'Važi. Nr.', 'Suma', 'Debetas', 'Kreditas', 'Suma val.', and 'Kurso kitimas'. The table contains one entry with a sum of 120,000.00 € and a debit of 443 and credit of 271. The interface also shows a 'Paskirtis' section with checkboxes for 'Mokesčiai gavėjui', 'Mokesčiai mokėtojui', and 'Mokesčiai lygioms dalims'.

Fig. 3. Using “PRAGMA” to represent the decisions: (a) decision sheet of BG; (b) “PRAGMA” form.

Fig. 3 demonstrate one of the steps that would have to be made to represent the decision sheet (Fig. 3-a) in “PRAGMA” (Fig. 3-b) – modeling buying of raw materials.

In a less advanced case, the students can compare the financial reports that are taken form “PRAGMA” and BG after the first financial year. If decomposition of the decision sheet has been performed correctly, the values should agree. Table 1 shows an example of such comparison.

Table 1. An example of Comparison of some indicators from Profit and Loss Statement.

Indicators	Values from “PRAGMA”	Values from BG “Hard Nut”
Sales revenue, EUR	7866000	7866000
.....
Gross profit, EUR	1859750	1859750
...
Net profit, EUR	1214928	1214928

The students could be encouraged to perform such comparison using MS ACCESS.

Conclusions

A scenario of use of business game “Hard Nut” with computerized accounting system “PRAGMA” has been proposed. This scenario makes demonstrates advantages and disadvantages (for example, the lack of historical data) of the computerized accounting system. The scenario also emphasizes the importance of proper accounting in the enterprise, as badly done accounting will result in wrong decisions, bad financial results and bad places.

However, the proposed scenario seems to be a little to advanced for many bachelor students. Because of that, it should be tried out with volunteers among the best students.

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