

PLAYING BOARD GAME: LESSONS (NOT ONLY) FOR STRATEGIC MANAGEMENT TEACHING

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ABSTRACT

Paper examines students' ability to use explicit and tacit knowledge. With students studying Strategic management in two following courses we play a board game "Power Grid" to test whether they are able to use knowledge we assumed they have in the second course. We tested their ability in specified criterions suitable for the game and students previous knowledge. As the result we found out low ability of students to use tacit knowledge and in the paper we discuss this issue.

KEYWORDS

Business game, business faculty, management, experiential learning

INTRODUCTION

In engineering and technological fields experiments can be conducted for students to have the opportunities to test and employ the theories and concepts that they have learned (Sun, 1998). However, in management areas as in the field of social science are such experiments if not impossible thus difficult to carry out. According to Jarošová (2005) there are different approaches to educate future managers which can be divided into two main streams: an academic and an experiential approach. Academic approaches to learning understand learning as a process of learning highly formalized objective scientific knowledge and capability development process of critical review and skills to apply knowledge in practice (Jarošová, 2005).

Experiential approach is represented by the experiential learning. Experiential learning according to Kolb (1984) is learning process whereby knowledge is created through the transformation of experience. Hawtrey (2007) sees the experiential learning as the incorporation of active, participatory learning opportunities in the course which is sometimes also call as situational learning.

To the discussion about management teaching Mintzberg (2004) adds that university professors overemphasize the science of management while ignoring its art. He contends that even graduated students have inflated views of their competence and ability to be successful. Mintzberg (2004) argues that many essential managerial skills can be learned only from personal experience and suggests a major change in management education which will allow students to gain more experience.

In the Strategic Management course at FEM CULS we use experiential learning approach with usage of case studies, team work, experiential exercises, active students' presentations, and active discussions to give rise the experience between students. There are also studies confirming the enhancement of students' managerial competencies (Švec, Tichá and Kadeřábková, 2011).

But there is a critique of some experiential learning tools (e.g. McCarthy and McCarthy, 2006) and as Jarošová (2005) stated to know is a must but it is more difficult to be able

to apply knowledge in real managerial situations. In paper we test the students' ability to apply acquired knowledge in specific managerial situation. As a test tool we use common board game which meets the criteria of complex situation in managing the company on strategic level. The aim of the paper is to find out the level of explicit and tacit knowledge (taught in the previous course of Strategic Management) which the students are able to use during the model situation (board game playing).

MATERIALS AND METHODS

The game was played with 25 students, 17 women and 8 men, who studied the course Applied Strategic Management in their final year in masters' study. This course follows the course of Strategic Management, where students learn strategic management principles, rules, and techniques with help of real life case studies. Therefore all students playing the game were supposed to have skills coming from the previous course of Strategic Management. Students passed the examination in Strategic Management course with different results. The structure of results is: (i) excellent 4 % of students, (ii) very good 48 % of students, (iii) good 36 %, and (iv) 12 % of students did fail to pass exam. The official studying results we can see as structure of knowledge level within the observed group of students. We also measure students' managerial competencies during the course of Strategic Management in six competency sets (Švec, Tichá and Kadeřábková, 2011): (i) Planning and organising (competencies of planning, organizational skills, and delegation), (ii) Impart information (competencies of transfer of information, presentation of opinions, written communication), (iii) In-person competencies (learning by doing, creativity, perspective, self-knowledge), (iv) Decision making (problem solving, quality decision making, early decision, cope with uncertainties, critical thinking), (v) professional competencies (business issues knowledge, specific field competencies), (vi) Team building competencies (co-creation of an effective team, building relationships with colleagues, dispute settlement, focus on results, issue instructions). Competencies affected in Strategic Management courses taught at FEM CULS Prague were identified and elaborated on basis of competency models of Lombardo and Eichinger (2009), and Stevens and Campion (1994). The structure of competencies of students involved in the experiment is seen in the Fig. 1.



Fig. 1: Competencies structure of students involved in the course of Strategic Management Game-play

Students were given rules of the game in advance for a week to precisely identify the driving forces, principles, barriers of the game, and to set up goals and their plan. With game rules came the task to study it, so students were not explicitly instructed to work more with the principles of the game as they were tested whether they will prepare themselves more or not and whether they exploit the experience and knowledge gained in previous course of Strategic Management.

In the workshop where experiment took place, before the game playing itself started, the students were given task to write down their main goal and strategy for the game. During the game playing were students also making the notes about their decision making process and its results. After the game playing they were asked to make an evaluation of each decision they had made. Students were also observed during the game playing.

The Power Grid Game's Phases

The Power Grid game is played over several rounds. Each round of the game has five phases (Fig. 2).

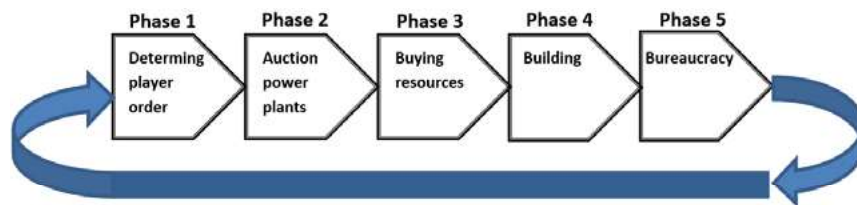


Fig. 2: Power Grid Game's Phases

During the phase 1 players' order is set up. Starting player is always the player with the most cities in his network. Determination of the order of remaining players follows the same rule. Strategic point with the players' order is that if you are the first one, you can pick a power plant from auction, but you buy the resources for your plants as the last one (and vice versa). In the phase 2 each player has the opportunity to buy at most one power plant according to his/her needs, which means to have plants with enough capacity to power all the cities in his/her network and to decide what kind of resource will the player use (the same as desired power plant needs). In the auction the player can do just two decisions: to pass or to choose the power plant for auction. In the phase 3 players buy resources for their power plants from the resource market. The strategic point here is revers: player with the smallest number of cities in the net starts. The phase 4 is building and as in the previous phase the last player starts to add cities to his/her network on the map which is essential to win the game. The phase 5 is called bureaucracy and players in this phase – according to detailed rules - earn money, re-supply the resource market, remove and replace power plants from the auction. This phase brings some strategic points for players: (i) Payment – according to number of cities connected to their network players earn amounts of cash known in advance (seen as table in rules). (ii) Re-supplying the resource market – players re-supply the resources used in their power plants and give them back to the game in the amounts according to the game rules, the amounts are also known in advance. (iii) Updating the power plant auction, where each player can see the new offer of power plants before the next run starts. After phase 5 new round of the game begins with the phase 1 again. The whole game ends immediately after phase 4 when at least one player has at least 17 cities connected and fully supplied in his/her network.

The winner is the player who can supply electricity to the most cities in his network with the power plants and resources he/she has. Only if there is a tie, the player with the most remaining money wins.

Used approaches

To find out what lessons from playing board games can be brought back to teaching of Strategic Management course we used combination of above mentioned competencies approach (Lombardo and Eichinger, 2009) and general views on strategy (Mintzberg, 1987).

Strategy and competency of planning

According to Mintzberg (1987) the word strategy has been used implicitly in different ways even if it has traditionally been defined in only one. Explicit recognition of multiple definitions helps people to manoeuvre through this difficult field. Mintzberg (1987) provides five definitions of strategy: Plan, Ploy, Pattern, Position, and Perspective. Strategy as a plan is some sort of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation. By this definition strategies have two essential characteristics: they are made in advance of the actions to which they apply, and they are developed consciously and purposefully. Strategy as a Ploy is a specific manoeuvre intended to outwit an opponent or competitor. Pattern is seen as stream of actions. As strategy is consistency in behaviour, whether or not intended. The definitions of strategy as plan and pattern can be quite independent of one another: plan may go unrealised, while patterns may appear without preconception. Plans are intended strategy, whereas patterns are realised strategy. From this we can distinguish deliberate strategies, where intentions that existed previously were realised, and emergent strategies where patterns develop in the absence of intentions, or despite them. Strategy as Position are means of locating an organisation in an environment. Strategy is the mediating force between organisation and context (between internal and external environment). Perspective strategy is not just a chosen position, but the perspective shared by members of an organisation, common thinking or behaviour of employees in specific organisation.

Research questions

In this article we want to find the lessons which can be taken from board game playing during workshop back to Strategic Management teaching. We take advantage of continuing teaching the same group of students in two consecutive semesters. The main research question is whether the students are able to use knowledge taught in the previous course of Strategic Management in current course during the model situation substituting the real situation.

Partial research questions follow:

1. Are students able to propose for the “real” managerial situation the goals in SMART format?
2. Are students able to propose goals which are relevant to the context of the managerial situation they face?
3. Are students able to propose the strategy corresponding with the set goals in the managerial situation they face?
4. What kind of strategy are students able to propose and follow in the “real” situation?
5. Are students able to identify strategic failures correctly?

RESULTS AND DISCUSSION

Based on proposed researched questions we followed six basic criterions: students' knowledge of rules, the ability to invoke the principle of SMART goals setting, the ability to propose goals corresponding to the context of the situation students face, the ability to derive strategy from the goals, type of strategy students used in game, and type of any poor decision they did in the game.

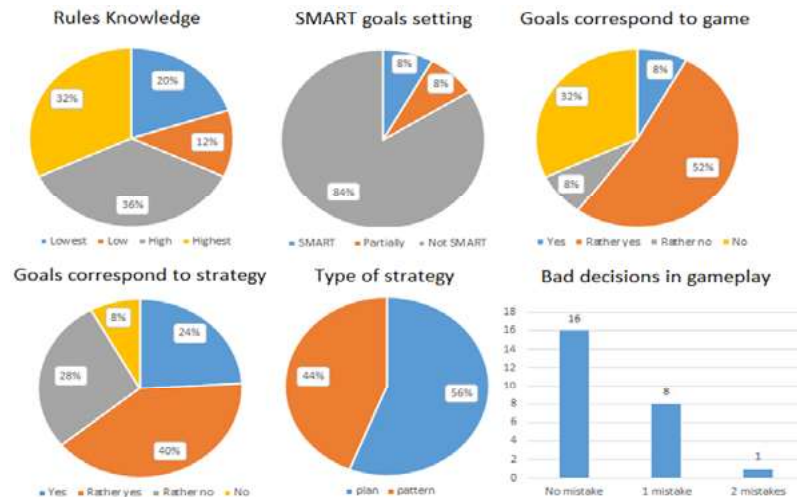


Fig. 3: Students results in observed categories

The level of rules knowledge can be deduced from the number of rounds played in the game. As students had the same time slot for the game (90 minutes) and they had to arrange the game in the beginning, the number of rounds played is showing who mastered the game rules and who did not (see graph Rules Knowledge in Fig. 3). Students who mastered the rules (32 %) should be in advantage according to the others who had not paid attention to conditions in which the competition took the place (68 %).

In the previous course of Strategic Management were students taught to use SMART approach for proposing any strategic goal, which means to set goals: specific, measurable, acceptable, realistic, and reachable in time. The game rules offer such a possibility, even more, the rules itself are giving students the exact wording of goals in SMART form. Despite that fact only 8 % of students were able to fully follow the SMART approach of goals setting, 8 % of students were partially successful with setting the SMART goals, and 84 % of students were just not able to formulate SMART goals (or just to copy them out from the game rules, where the goal is explicitly expressed)— see SMART goals setting in Fig. 3. Setting the goals is not only about being SMART, but goals should correspond with the context in which they are set. In our case this context were game rules and the main goal of the game was to "... supply electricity to the most cities in his network with the power plants and resources he has." (Friese, 2004, p. 7). With this criterion we examined whether the set goals are appropriate and achievable in the game. As it is seen in Fig. 3 – Goals correspond to game - fully corresponding goals had only 8 % of students, rather corresponding goals had 52 % students, and 40 % of students were not able to formulate appropriate goals. In proposing the strategy the setting of goals is followed by strategy

formulation. These two steps are tightly linked and proposing strategy have to be based on set goals. Therefore we examined whether students strategies correspond to their goals they set before. In 64 % of cases the strategies were based on goals students set before, although only 24 % of cases did match perfectly – see Fig. 3 – Goals correspond to strategy. The last criterion we examined - strategy setting category - was type of strategy students used. We used two of Mintzbergs' five views on strategy (Mintzberg, 2001) – plan and pattern, as they fit best to our intention and conditions. Mintzberg (2001) sees plans as intended strategy, whereas patterns sees as realised strategy. From this we can distinguish deliberate strategies, where intentions that existed previously were realised, and emergent strategies where patterns developer in the absence of intentions, or despite them. Students did not have to improvise with the strategy in 56 % of cases – see the Fig. 3 – Type of strategy – the rest of students (44 %) did not have clear strategy or was not able to perform strategy well and had to adapt to the situation they faced.

During the game playing students noticed their decisions into the forms and after the end of game playing students made after-action-evaluation. The strategic decisions in the game are following: (i) choosing a city to start with, (ii) choosing the power plant to or not to, (iii) choosing to or not to start ploy within the auction system. According to the after-action-evaluations there were 16 students who made no strategic mistake during gameplay, 8 students made 1 strategic mistake and 1 student made 2 strategic mistakes. Results can be seen in Fig. 3 – Bad decisions in gameplay.

Discussion about take away lessons

Students did fully recall the need of SMART goals only in 8 % of examined cases and only 8 % of students were able to propose the goals fully corresponding to the managerial situation they faced. If students set any goals 24 % of them were able to propose a corresponding strategy. These results are quite negative because of low rates. On the other hand 56 % of students proposed strategy with intended purpose (plan) and 64 % of them did not take a wrong strategic decision during the game.

These results show the dominant inability to use properly the competency of planning, which according to Lombardo and Eichinger (2009) means to accurately scope out the length and difficulty of tasks and projects; to set objectives and goals; to develop schedule; anticipate and adjust for problems and roadblocks; measure performance against goals; and evaluate results. On the other hand students showed the ability to foresee the situation, in major to take a good decision when needed.

As our intention was to find out what can be taken from playing the board game with students to the strategic management teaching, the statistical dependence of six variables on students grades from Strategic management course were calculated. The results we present in Table 1.

| Testing dependence between: | Pearson's chi square | P value | α |
|---|----------------------|---------|----------|
| Level of rules knowledge vs. Grade | 0.0188537 | 0.89079 | 0.05 |
| SMART goals setting vs. Grade | na | na | na |
| Goals correspond with the main goal of the game vs. Grade | 0.0267094 | 0.87018 | 0.05 |
| Strategy correspond to the goals vs. Grade | 0.0712251 | 0.78941 | 0.05 |
| Type of strategy vs. Grade | 0.0509907 | 0.82135 | 0.05 |
| Mistakes evaluation vs. Grade | 0.3216257 | 0.57063 | 0.05 |

Tab. 1: Dependence between monitored variables and grades

According to statistical test in Table 1 we found out no variable is dependent on the grades. Dependency between setting the SMART goals and students' grades from previous Strategic management course could not be calculated as they did not meet the statistics' conditions. Above mentioned results mean that the grades students gained in previous course did not have any influence on their behaving during the game (in each case is $P > \alpha$). As the grades from previous course represent the recognized level of knowledge which students achieved or demonstrated during the exam (written and oral) and the game we can see as a model of real strategic situation, therefore we can say students do not use their knowledge of strategic management in situation(s) or in the moment(s) where/when this knowledge should be used.

This result brings further analytical question: "Why do not students use the knowledge they probably have when facing the "real" managerial situation?" The most likely answer is: "They do not possess adequate knowledge." During the course we predominantly teach them explicit knowledge and we do not focus enough to experience also so called tacit knowledge despite the fact we use variety of experiential learning tools.

CONCLUSIONS

From the view of above presented results we agree with Mintzberg (2004) who said that many essential managerial skills can be learned only from personal experience and who also suggested a major change in management education which would allow students to gain more experience. Such a major change might be a change in portfolio of teaching tools which can provide more personal experience for students and thus can increase the tacit knowledge level.

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