

Analysis of the Studies Published on Business Strategy Game and Learning Strategic Management in the Web of Science Database

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Abstract—Although the variety of computer-based games offered for strategic management, ease of use and the number of games available in the market has decreased due to multiple factors, it has also increased. Depending on the criterion of the objectively measured learning outcomes, various games that have been studied to date yield higher results than those obtained by case approach as an alternative teaching strategy. Very little research has been conducted on factors that facilitate play, leading to effective learning outcomes in a business gaming environment. The general purpose of this research is to determine the work conducted on Business Strategy Game (BSG) and Learning Strategic Management. This study was conducted using qualitative research method, document analysis and related content analysis, studying the keywords ‘Business Strategy Game and Learning Strategic Management’ in the Web of Science database, based on the analysis of the documents. The studies in the Web of Science database were analysed according to years, the Web of Science categories, the research area, country/types and writing languages. The analysis of the studies in the Web of Science database for BSG and learning strategic management emerged with the resulting content. A total of 39 studies were carried out and it was concluded that the most common transactions were made in 2019. However, the first study was conducted in 1995. In the literature

review, the year 2019 has the most reads, which were mostly published articles. According to the Web of Science field type, it was concluded that there were studies mostly in the Education and Educational Research field and it was also concluded that 38 of these studies were written in English.

Keywords—Learning, technology, Business Strategy Game, Learning Strategic Management, Web of Science

1 Introduction

As the number of people born from the beginning of the 21st century to the present has increased, the applications made for the 21st-century generation have also diversified. Net citizens (netizens), also called digital natives, are a born generation. The interpretation of technology is as if there is no life without technology in daily life with the generation of this new age, which is referred to by different names, internalised. [16]. With the rapid increase in technological developments, the widespread use of computers and the fact that computers have become mobile and accessible from anywhere, new generation children spend a lot of time in digital games, leading to the criticism that digital games reduce sociability. In line with all these results, the importance of technological tools used in every field has increased [16].

Developing students with high levels of competence and abilities in today's education system is a very challenging task for any instructor. Graduates are expected to possess a wide range of competencies, such as critical thinking, problem-solving and cognitive skills, to enter the job market. The world economic trend is changing rapidly, creating more requirements for students to develop their skills to be experts, flexible and adaptable [8].

Simultaneous streaming of Steven Johnson, *Everything Bad Is Good for You*, and the media outlook reports the X-rated content in the popular game Grand Theft Auto and the social implications of computer and video games. Video games connoisseurs say that video games are complex, cognitively challenging and emotionally engaging – arguably the most engaging of contemporary popular art formats. Interactive digital media or video games are a powerful new medium. They offer immersive experiences where players solve problems. Players learn more than facts – ways of seeing and understanding problems so that they 'become' different kinds of people. The 'serious games' of business strategy, advertising and entertainment embody these features and point to a future paradigm for e-Learning [17, 26]. Gaming academics point out how games are transforming the government, industry and perhaps now education. Meanwhile, critics use little social value of games and can even be harmful. In fact, gamers, who are sympathetic to new technologies, do not understand how games work as simulations [20]. To date, very little is known about the consequences of playing games on the cognition rate of those who play them, and there is little work on 'expert' game practice [19,7,18].

The importance of human capital for business is still the same. Artificial Intelligence can improve the success of the society – something more complex than a robot can. Human resource is a kind of valuable resource, where educating and training potential talents can be continuously improved. In the age of globalisation, companies have trained their employees for better job performance by provided training, such as on-the-job training and project method training such as coaching [1]. The SIMS course uses Business Strategy Game (BSG) simulation to enable students to experience a top management from a team's perspective by experiencing the conditions of competition in the sneaker industry and managing the company [3,24].

If we create the definition for BSG in general, it will be as follows: a computerised business simulation that is widely used in the international sports shoe industry. It is also used in many areas. The game, now in its sixth edition, allows students operating in small groups to compete with different companies in the same industry and control an independent company. The game requires students to make a large number of decisions regarding product pricing, marketing, manufacturing and all aspects of company operations during various decision periods. At the end of each decision period, the decisions taken by the students are analysed in a computer environment and scored according to the predetermined criteria. The BSG allows students to compete in teams (all form a company, team/company will be synonymous here) in a global arena covering four regions – Europe-Africa, North America, Asia-Pacific and Latin America [3,21]. They compete against teams of their class and compare/compare data with worldwide teams/companies. Each company competes head-to-head against shoe companies managed by other teams. Of course, competition plays an important role in this process in terms of experience. Each company sells its own brand to retailers worldwide and to people purchasing online from the company's website.

Computer-based simulation that provides players with an experience in strategy development, team building, decision, empowerment and basic marketing skills is called BSG. For students, they manage their companies in a competitive marketplace against other teams. The BSG, which pushes students into a competitive market environment, also forces them to take risks and anticipate competitor strategies in addition to developing and implementing their own team strategies [2,3,8]. In Rusko's [15] study, she stated that technology-supported training facilitated job performance and learning. In other studies, different academics determined the impact of capturing, creating and distributing value in collaboration; managing collaboration in knowledge-based industries and investigating the differences in cooperation in firm sizes. From all these studies, the transfer of technology to the business environment and its importance in the business environment is increasing [14,25]. The purpose of the collaboration depends on why companies choose such a strategy or relationship [13]. Collaboration can improve individual firm performance and significantly improve market positions when carefully managed by firms [5,12]

We live in an age in which technology is used in every sector and technological developments are progressing rapidly. At this time, it is important to determine which studies were carried out in the field of BSG and learning strategic management and in which countries these studies were conducted.

1.1 Purpose and importance of research

The general purpose of this research is to analyse the articles obtained through scanning the Web of Science database systematically, by examining them according to the determined themes (BSG and learning strategic management) and by discussing them with other basic concepts. All articles published in the Web of Science database were included in this study.

Limitations

- This research is limited to documents selected and reviewed in the Web of Science database.
- Content analysis of documents is limited to the six themes mentioned earlier.

2 Method

In this study, qualitative research methodology was carried out using document analysis and relevant content analysis. The main process in content analysis is to compile data similar to the research within the framework of the determined concepts and themes and to interpret institutions in a way that the reader can understand. Content analysis is a scientific framework that provides systematic analysis of oral, written and other research resources [27].

2.1 Data collection and analysis

Within the scope of the BSG and learning strategic management research, a research was carried out by using the keywords ‘Business Strategy Game’ and ‘Learning Strategic Management’ in the Web of Science database between 1995 and 2020, and 39 types were determined as a result of this research, as shown in Figure 1. The documents accessed from the Web of Science database were analysed, correlated and adapted, and the data were analysed with content analysis.



Fig. 1. The documents accessed on the Web of Science database using the keywords ‘Business Strategy Game’ and ‘Learning Strategic Management’

3 Findings

3.1 Findings of the documents by years

In the research, 39 studies were accessed by browsing the Web of Science database to find studies on ‘BSG’ and ‘learning strategic management’. The distribution of data, of 39 studies, by years is given in Table 1.

When the findings of the studies on BSG and learning strategic management were examined, it was found that the studies were carried out mostly in 2019. However, the first study was conducted in 1995. It turned out that there were no studies in 2017, 2006, 2004, 2002, 1996, 1997 and 1998.

Table 1. Distribution of the documents by years

Years	Frequency
2020	1
2019	6
2018	3
2016	4
2015	2
2014	4
2013	2
2012	2
2011	3
2010	2
2009	1
2008	1
2007	1
2005	1
2003	1
2001	2
2000	1
1999	1
1995	1

3.2 Findings of the documents by document type

When we examined the studies conducted in the fields of BSG and learning strategic management and scan the Web of Science database, we saw that there were published articles (24) and proceeding papers (15). Articles of different document types were not published in these fields.

Table 2. Distribution of the documents by document type

Document type	f
Article	24
Proceedings paper	15

3.3 Findings of the documents by Web of Science categories

When we look at the distribution of studies in the fields of BSG and learning strategic management, which are among the studies in the Web of Science index, according to the Web of Science categories, we observed that the field of study was education and educational research (16). Again, according to the fields of study, we concluded that there was more work conducted in the field of Management (13). Among these areas, work was also carried out in the Operations Research Management Science (8) area.

Table 3. Distribution of the documents by Web of Science categories

Web of Science categories	f
Education and educational research	16
Management	13
Operations research management science	8
Business	5
Computer science information systems	3
Computer science artificial intelligence	2
Computer science interdisciplinary applications	2
Engineering electrical electronic	2
Engineering industrial	2
Psychology social	2
Social sciences interdisciplinary	2
Social sciences mathematical methods	2
Business finance	1
Computer science cybernetics	1
Computer science software engineering	1
Economics	1
Engineering biomedical	1
Engineering manufacturing	1
Engineering multidisciplinary	1
Environmental studies	1
Information science library science	1
Transplantation	1

3.4 Findings of the Documents by Research Area

When the research areas of the studies published in the Web of Science database were examined, it was found that equal research was carried out in the fields of business economics (16) and education and educational research (16). Also, there are eight studies in the field of operations research management science. It was found that the least research areas were in the fields of environmental sciences ecology (1), information science library science (1) and transplantation (1).

Table 4. Documents by research area

Research area	f
Business economics	16
Education and educational research	16
Operations research management science	8
Computer science	6
Engineering	6
Mathematical methods in social sciences	2
Psychology	2
Social sciences and other topics	2
Environmental sciences ecology	1
Information science library science	1
Transplantation	1

3.5 Findings of the Documents by Countries

Considering the distribution of studies on the themes searched in the Web of Science database by country, it was found that the country with the most studies was USA (12). Germany (4) ranks the second. In the ranking of countries, Canada (3) and Italy (3) rank third. The number of countries where no study has been conducted is quite high.

Table 5. Documents by countries

Countries/regions	f
USA	12
Germany	4
Canada	3
Italy	3
Belgium	2
England	2
Ireland	2
Netherlands	2
Portugal	2
Australia	1
Brazil	1
Czech Republic	1
Finland	1
France	1
Indonesia	1
Malaysia	1
Norway	1
Russia	1
Scotland	1
South Korea	1
Thailand	1

3.6 Findings of the Documents by Languages

When the written languages of the studies scanned in the Web of Science database were checked, it was found that almost all of the studies were written in English (38) and one study was written in Portuguese.

Table 6. Documents by languages

Languages	f
English	38
Portuguese	1

4 Conclusion and Discussion

In line with the scope of this research, when the distribution of studies on BSG and learning strategic management in the Web of Science database by years was examined, it was concluded that the most studies were carried out in 2019. The result also showed that the first study was conducted in 1995. Considering the technological developments, it is a joy that working in the fields of BSG and learning strategic management has increased in recent years. However, when looking at the distributions by years, there is no slope that goes right. The fact that studies have not been carried out in some years ensures that we cannot follow the current developments in this field.

When we examine the studies in the fields of BSG and learning strategic management and scan the Web of Science database, we concluded that the articles (24) were published as proceeding papers (15). Studies on different types of documents in these areas have not been published. Studies on book chapters and book writings on the BSG and learning strategic management can be carried out.

When we look at the distribution of studies in the fields of BSG and learning strategic management in the Web of Science database by categories, it can be concluded that the most studies were in the field of education and educational research (16). It can be concluded that there are many studies in the field of management (13) in the Web of Science categories database. This situation is the result of the distribution according to the fields within the Web of Science database itself. In this case, we can say that studies in different fields are lacking.

Again, when we examined the research areas of the studies published in the Web of Science database, which is our other finding, it was seen that equal research was carried out in the fields of business economics (16) and education and training research (16). While it was concluded that the most studies in the Web of Science database's own field research were education and educational research, when the research areas of the studies were examined, the field of business economics was included. There are 8 studies in the field of operations research management science [23]. It was concluded that the least research areas were environmental science ecology (1), information science library science (1) and transplantation (1). Substantial research focuses on the importance of teamwork in business management

[4,6,9,10,11,22]. For this reason, it can be said that the studies conducted are high in this field.

Considering the distribution of studies on the themes researched in the Web of Science database by country, the most researched country was USA (12). On looking at the countries of the authors who conducted the studies, Germany (4) ranks the second. In the ranking of countries, Canada (3) and Italy (3) rank the third. The number of countries without studies is quite high. This situation may be related to the state of developed countries in terms of globalisation. USA is a developed country among the countries of the world.

When the written languages of the studies scanned in the Web of Science database were examined, it was concluded that almost all of the studies were in English (38). It was seen that only one study was written in Portuguese. This situation is thought to be related to the fact that English is accepted as a universal language. However, when looking at the distribution by country, it can be said that studies in different languages should be increased.

As a result of this research, suggestions to future researchers are as follows:

There is very little work in the fields of BSG and learning strategic management, therefore more studies should be carried out. This study was conducted in the Web of Science database. Theses related to the field of BSG and learning strategic management should be examined and further studies should be conducted. The number of countries that have not worked on the BSG and Learning Strategic Management area is quite high. Therefore, studies in these countries should be conducted and compared.

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