# BLUE OCEAN STRATEGY IN THE EDUCATIONAL SECTOR: CREATION OF A DIGITAL GUIDING TOOL FOR TEACHERS TO FACILITATE THE INTEGRATION OF DIGITAL GAMES IN THE CLASSROOM

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#### Abstract

Teachers find it hard to select good educational games, and to find out how they can integrate these games in learning activities in the classroom to optimize learning for all pupils [1]. Via our research we want to facilitate the integration of digital games in the classroom by creating a Digital Guiding Tool for teachers.

To create the Digital Guiding Tool, we experienced a challenge: there exist already many websites (competitors) regarding 'Games' and 'Game-based learning' for teachers in Belgium. A key question was raised: How could we offer something with *added value* for teachers? We answered the question by using business methods, and more concretely we used the Blue Ocean Strategy [2] to analyze our competitors and create an uncontested market space to support teachers' needs.

In this paper, we first introduce our research, and the methodology. We explain the use of this methodology by using our research to build a Digital Guiding Tool for teachers as a case study. After that we describe our results, and conclusions.

Keywords: Design-driven Innovation, User-Centered Design, Business Methodology, Blue Ocean Strategy, supporting tools, games, game-based learning.

#### **1 INTRODUCTION**

Research shows that the use of educational games in the classroom increases students' motivation, involvement, and productivity [3][4]. This can be explained by the fact that games, if developed and implemented effectively, fulfil the three basic needs of learners as described by the self-determination theory: competence, autonomy and relatedness [5]. However, games are rarely used in Flemish classrooms: only 25% of the Flemish primary teachers regularly use educational games in their lessons [6]. Teachers report difficulties in selecting appropriate educational games, and often lack the knowledge and time to effectively integrate these games in their classes [6]. The goal of our research is to support teachers to overcome those barriers and facilitate the integration of digital games in the classroom. For this purpose, we are creating a Digital Guiding Tool for teachers and guidelines for the integration of learning activities with games.

Regarding this product development, we have paid special attention to finding a balance between user-centered and design-driven approaches for innovation [7]. We have used user-centered design activities like competitors analysis, audience definition, user scenarios and content survey [8], and we have also used a design-driven approach [9], that is the Blue Ocean Strategy [10].

We have used Blue Ocean Strategy methodology to enhance the conventional competitors analysis used in User-Centered Design. We have dived into business literature and found that this methodology has successfully facilitated the creation of value proposition [11] in different industries, and only few applications are found in the education industry. The Blue Ocean Strategy has proven to be valuable in education in some rare cases, such as the Khan Academy [12]. Improvements to Higher Education have recently been proposed using Blue Ocean Strategy [13]. However, the use of Blue Ocean Strategy for education is still very rare, and the added value for the educational sector has never been described concretely. Therefore, we want to show with this article how to use Blue Ocean Strategy in the educational sector to create value proposition, and build uncontested markets. Specifically, we want to do this via a practical approach, using the concept creation of our Digital Guiding Tool as a case study.

This paper is structured as follows: Section 2 describes the Blue Ocean Strategy framework, and the concept creation of our Digital Guiding Tool as a case study. In section 3 we present our results. Finally, in section 4 we present our conclusions.

## 2 METHODOLOGY

Via our research we want to facilitate the integration of digital games in the classroom by creating a Digital Guiding Tool for teachers. Since the conceptualization phase of web and game design is so crucial, and often done without proper market analysis [14], we propose the use of Blue Ocean Strategy as supportive methodology. We have used Blue Ocean Strategy [10] complementary to a conventional competitors analysis [15]. We have used this methodology because there exist many competitor websites to our Digital Guiding Tool-on-the-making, and we want to create value proposition while avoiding heavy competition.

### 2.1 Blue Ocean Strategy

Kim and Mauborgne analyzed 150 companies from 30 different industries during 100 years, and concluded that in their opinion there existed two types of markets: red oceans and blue oceans. According to the authors only companies from the blue ocean markets were able to achieve true success.

The authors compared the Blue Ocean Strategy with the Red Ocean Strategy and found the main differences shortly described in Table 1.

Red Ocean Strategy	Blue Ocean Strategy
Compete in existing market space	Create uncontested market space
Beat the competition	Make the competition irrelevant
Exploit existing demand	Create and capture new demand
Make the value/cost trade-off	Break the value/cost break off
Align the whole system of a company's activities with its strategic choice of differentiation or low cost	Align the whole system of a company's activities in pursuit of differentiation and low cost

Table 1. Comparison of Red Ocean Strategy and Blue Ocean Strategy [16]

Based on their learnings about blue and red ocean markets and strategies, and concerned about the idea of developing new markets, they created a framework and tools for creating uncontested market space called Blue Ocean Strategy [16].

One of the best known Blue Ocean Strategy frameworks is the *four actions framework*, which focuses on creating a company's strategic profile and value curve by *creating*, *eliminating*, *reducing*, or *raising* industry factors (Fig.1). The actions are shown below and are shortly explained on Table 2, with Chan and Mauborgne first example case of the *Cirque du Soleil* used in their paper from 2004 [16].

Another action framework important for the Blue Ocean Strategy is the Strategy Canvas which helps designing value curves like proposed by Kim and Mauborgne [16]. The value curve is a visual profile of an organization's performance within the industry, and is considered the core component of the strategy canvas. The strategy canvas illustrates two axes. The vertical axis shows the offering level that customer receive across all of the key factors, while the horizontal axis captures the range of factors that the industry competes on.



Figure 1. Blue Ocean Four Actions Framework for value creation [16]

The key factors used in the strategic canvas, such as price, performance or unique venue, are derived from an organization's investment in resources, processes and capabilities. Furthermore the key factors involve strategic choices and impact strategic purpose. According to Kim and Mauborgne [16], it is significant to know the key elements, therefore an organization should invest in research and analysis inside and outside the company.

To illustrate the Strategic Canvas tool, we show below the example case of the *Cirque du Soleil* (Fig. 2).

Eliminate	Raise
Star performers, animal shows, aisle concession sales, multiple show areas	Unique venue
Reduce	Create
Fun and humour, thrill and danger	Theme, refinement environment, multiple productions, artistic music and dance

Table 2. Cirque du Soleil's Four Actions Framework [16]

### 2.2 Case Study

Our initial research phase, desk research and focus groups, shows that teachers experience four main limitations to integrate digital games in the lessons [17]. The first one is the lack of information regarding existing games. Therefore teachers experience as second limitation the lack of time because they have to invest time on searching appropriate games. The third limitation is the lack of technological knowledge to use digital games. And, as fourth limitation, teachers report a lack of knowledge on how to, and when to integrate games in the lessons. With our Digital Guiding Tool, we want to support teachers and diminish these four limitations.

To find out our blue ocean strategy, we selected typical web/educational industry factors, and consequently scored those factors for several competitor websites known in Flanders. The factors and existing competitors were selected taking into account the results of the initial research phase [17] and the experiences learned from the co-design sessions with teachers in the second phase [18][19].



Figure 2. Cirque du Soleil's Strategic Canvas [16]

# 3 **RESULTS**

### 3.1 Strategy Canvas Framework

Based on our research [17][18][19], we have selected the following key factors: user experience, attractiveness of the website layout, quality of the information on the website, number of games collected on the website, quality of the collected games, user's login, user's profile, possibility of additions of content by users, service, professionalization of teachers, technical support, online accessibility, offline accessibility, presence of complete teaching activities both online and offline.

We scored several competitor websites known in Flanders that intend to support teachers in the use of games in the classroom. These websites can be mainly divided in two categories: informative websites, or game-database websites.

After the score was given for the selected factors, we noticed that most of the competitors focus on collecting digital games, lack informative content about the use of games in the classroom, and practical examples of how to use games in the classroom, specifically lesson sheets.

Therefore we decided to eliminate the factor of collecting digital games, and avoid the competition of game-database websites. We have also decided to eliminate the option to login to the website, and its related activities like creation of a user's profile, posting messages on pages, sending messages to other users of the website, and, adding games to the database. We have eliminated the mentioned factors to avoid heavy competition, and focus on creating the most value for teachers, that is complete teaching activities with games, and simplicity of the website so they do not need to spend so much time on looking for games and their implementation in the classroom. We have decided to eliminate both game-database oriented websites and profile-oriented website due to the high maintenance costs of this kind of websites regarding technical aspects and quality of the materials added by users. Another reason to eliminate those factors is budget limitations of our current research.

We decided to reduce the visual complexity of the website by going for a simple and beautiful web design. We decided to reduce the technical complexity of the website implementation and maintenance by joining the Drupal system of our university as project-website, and eliminating native apps. In this way, once our research funds are finished our university still covers the cost of maintenance of the system.

We decided to raise the user experience by provide teachers of relevant information about the integration of digital games in the classroom. We decided to raise the online accessibility by using a

responsive website template that works in different browsers, and mobile devices. We decided also to raise our communication efforts and make a marketing plan that includes social engine optimization, and social media.

We decided to create videos with good practices. We also decided to create an offline-toolbox with a set of cards of complete teaching activities with games, create a service for the professionalization of teachers regarding the integration of games in the classroom from the technical and pedagogical perspectives. These teaching activities are concrete lessons plans related to curriculum goals of primary education. We realized that offline materials are also beneficial for teachers who are taking their first steps into the digital world, and looking for inspiration

We have represented the scores in the Strategy Canvas framework (Fig. 3).



Figure 3. Strategic Canvas applied to our Digital Guiding Tool

# 3.2 Four actions framework

Our Blue Ocean Strategy described in section 3.1 has been summarized in Table 3.

Eliminate	Raise
<ul> <li>Native apps</li> <li>user's login</li> <li>user's profile</li> <li>user's additions</li> <li>Collecting games (no database of games)</li> </ul>	<ul> <li>User experience</li> <li>Quality and layout of the website</li> <li>Quality of the activities, and information</li> <li>Online Accessibility <ul> <li>Responsive website</li> <li>Social media presence</li> <li>Search engine optimization</li> </ul> </li> </ul>
Reduce	Create
<ul> <li>Technical complexity <ul> <li>Join existing Drupal system</li> <li>Reuse Drupal modules of the university</li> <li>No login</li> <li>No native apps</li> <li>No database of games</li> </ul> </li> <li>Visual complexity <ul> <li>no games search function per criteria</li> <li>improve organization of the content</li> <li>clear site map and structure</li> </ul> </li> </ul>	<ul> <li>Offline Accessibility</li> <li>Cards set with Complete teaching activities with games</li> <li>Professionalization of the teachers</li> <li>Service         <ul> <li>Technical support</li> <li>Professionalization of the teachers</li> </ul> </li> <li>Motivational/Good Practices Videos</li> </ul>

Table 3. Four Actions Framework applied to our Digital Guiding Tool

# 4 CONCLUSIONS

The Blue Ocean Strategy has been very valuable for our research. We have gotten a better view of the competitor websites and their activities and market strategies. We have therefore been able to create our own strategy to avoid competition and in this way invest our research funds 'smarter'. Blue Ocean Strategy has not only supported us to decide how to create our Digital Guiding Tool, but has also helped us to conclude that the integration of games in the classroom can also be stimulated by creating offline materials that would include lessons sheets where games are used.

As *offline* material we are creating a set of cards with concrete lessons plans using games to reach curriculum goals, and this is an innovation that we would not have considered as possible solution because the goal of our project was the creation of an *online* - digital- guiding tool.

We invite editorials and existing digital guiding tools to also create offline materials and facilitate the process of integration of digital games in the classroom. These offline materials are also beneficial for teachers who are taking their first steps into the digital world, and looking for inspiration.

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