

# Entrepreneurship Game: Digital ‘Catur Bistari’

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**Abstract**—The role of entrepreneurs in generating the economy is very important. Thus, nurturing entrepreneurship skills among society is very crucial and should start from the early age. One of the methods is to teach through game such as board game. Game provides a fun and interactive platform for players to learn and play. Besides that as today’s world is moving towards Islamic approach in terms of finance, banking and entertainment but Islamic based game is still hard to find in the market especially games on entrepreneurship. Therefore, there is a gap in this segment that can be filled by learning entrepreneurship through game. The objective of this paper is to develop an entrepreneurship digital-based game entitled “Catur Bistari” that is based on Islamic business approach. Knowledge and skill of entrepreneurship and Islamic business approach will be learned through the tasks that are incorporated inside the game.

**Keywords**—Board game, educational game, entrepreneurship, Islamic finance and simulation.

## I. INTRODUCTION

ENTREPRENEUR is a person who initiates change, which only can be found in a small number of the population. On the other hand, entrepreneur can be defined as someone who wants to work for him or herself [1]. The importance of entrepreneurship in generating the economy could not dismiss or ignore. That is why there are various methods in teaching and promoting entrepreneurship in today’s world. Such as typical seminars or courses, multi level marketing and implementing entrepreneurship elements in education systems. In order to reach to the younger generation, entrepreneurship can be introduced by combining some elements of entertainment in it which could be done through a game based model. This concept is not only fun and interactive but also meets the preferences of the target audience. According to Coats, most people are not aware that games have greater potential in educational influence. [2]. While playing the game, each player will have their own strategy and must abide to the game rules and regulations thus teaches players to be more discipline. Besides that, the game will also be used as a medium to promote entrepreneurial skill and Islamic business value through tasks that the player needs to perform and complete. Currently, in Malaysia, the primary method used in teaching and promoting entrepreneurship is through seminars and courses. This method requires people to attend lectures delivered by successful entrepreneurs or listen to a crash course on entrepreneurship by representative from various institutions or government agencies.

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There is also an approach to integrate elements of entrepreneurship in the education systems. Both methods lack of having the interactive and fun elements. Most of it ends up being just another plain lecture where people come and go. That is why one can see that although there are a lot of seminars and courses related to entrepreneurship here in Malaysia and even entrepreneurship has been made into a compulsory subject in most higher learning institutions; the number of young entrepreneurs in Malaysia is still low. In fact, most students still lack of entrepreneurial skill, finance management and business ethics which is crucial in becoming an entrepreneur.

Although the trend today is moving towards Islamic approach whether in business, fashion or entertainment but there is limited number of entrepreneurship game that is based on Islamic approach. In the game industry, other than the typical Monopoly and Cash Flow board game, which is based on capitalism, it is hard to find other entrepreneurship game that based on Islamic business approach. Therefore, there is a need to fill this gap. Besides that, physical board games are prone to lost and damages. The choices of tasks inside the game are also repetitive and limited in terms of number. This will create boredom if played often. The trend today is moving towards Islamic approach whether in business, fashion or entertainment. However, there are a limited number of entrepreneurship games that is based on Islamic approach. Therefore, the main objective of this paper is to introduce and develop a digital version of entrepreneurship board game named “Catur Bistari”. This game can be seen as a reflection of the typical Monopoly and Cash Flow board game but instead based on capitalism; it embedded the Islamic approach in the business rule of the game.

## II. ENTREPRENEURSHIP EDUCATION

Entrepreneurship development is an ongoing process since human start trading among each other. Entrepreneur is a person who can transform an idea into a product or service according to the demand of the consumer [3]. Social entrepreneurship, as a practice and a field for scholarly investigation, provides a unique opportunity to challenge, question, and rethink concepts and assumptions from different fields of management and business research[18]. Here in Malaysia, since independence, entrepreneurship is considered one of the main methods in eliminating poverty and increase living standard of the people. Since the establishment of Majlis Amanah Rakyat (MARA) in 1966 [4] and the Ministry of Entrepreneur and Cooperation Development (MECD) in 1995 [5] more and more people are opting to entrepreneurship. Entrepreneurship has been taken to a new level during the

booming of dot com or internet in the early 2000. People can build an online business and reach the whole world as their market.

Under the guidance and preview of MARA and MECD there are a lot of seminars, courses and workshops organize in order to train and produce entrepreneurs. These include the teaching and training about how to start and manage the business, how to develop and expand the business, how to finance the business and entrepreneurship program and training [5]. The teaching and training listed before focuses on people age 18 and above. Basically, the programs assume that participant already had a basic understanding of doing business. There are two public universities in Malaysia offer entrepreneur education program [6][7] while some other higher institutions embed it in the project management course. According to Jaafar [6], the program is very useful to undergraduate students as their first move in business and to increase the quality and quantity of future entrepreneurs. Baharuddin and Arokiasamy proposed two steps to promote cyber entrepreneurship in higher education; organize Business plan competition among final year students and followed by applying the start-up stages that can cultivate positive interest in entrepreneurship [8]. However, nurturing entrepreneurship from young is not being left out. It is easier to instill values such as entrepreneurship skills at the early stage rather than when someone is older. Elementary School Entrepreneurship Program was introduced in Malaysia to inculcate an entrepreneurial culture amongst primary school students. Even though the program receives high inputs from implementing agencies, the progress of the implementation is still moderate [9]. For the secondary schools there is another program called Young Entrepreneurship Program, implemented by the Ministry of Entrepreneur Development and Co-operative Development (MECD) and Ministry of Education. The participants of the program are required to set up and manage their own company [10].

### III. SIMULATION FOR ENTREPRENEURSHIP EDUCATION

Business plan writing is the first approach in entrepreneurship classes since early 80's and it is become less effective as the enrollment increases [11]. This approach relies on theoretical descriptions of business plans [12]. According to Fregetto, the simulation is more worthy in teaching entrepreneurship as it allows experimental learning that helps students to explore uncertainties issues and create a group work ethic [11]. Challenging the students to practical work outside the classrooms and requiring significant personal commitment could achieve acceptable outcomes in learning experience [20]. Table 1 shows the list of entrepreneurship simulation as analyzed by Schindehutte [13].

Based on the comparison, Schindehutte [13] found that GoVenture is the best entrepreneurship simulation as it is the only program that has dimension of personal life and games to add more values to the learning process.

TABLE I  
LIST OF ENTREPRENEURSHIP SIMULATION

Simulation	Description
<b>Threshold Entrepreneur</b>	The focus is more on how to run a new company
<b>The Business Disc</b>	Players need to develop a business plan for a new company. Simulation for 1 year business operation.
<b>GoVenture</b>	Very comprehensive program that includes the planning and running phases. Fun with online games.
<b>VCommerce</b>	Online program with unique a feature that adds a touch of realism.
<b>Venture.SIM</b>	The program is limited to the finances.
<b>Entrepreneur</b>	A good program for retail businesses.
<b>DEAL</b>	It allows the players to choose position in company.
<b>Corporation</b>	It is comprehensive but focus on running a big company instead of a small start-up business.

### IV. ENTREPRENEURSHIP GAME

The most popular entrepreneurial game is Monopoly which is a board game published by Parker Brothers, a subsidiary of Hasbro. The purpose of the game is to earn as much wealth as possible and force other player to bankruptcy [14]. This is done by buying, renting and trading properties using play money. The game is named after the economic concept of monopoly, the domination of a market by a single entity. This is much related to the capitalism approach of economy. There are also other version of Monopoly such as Sahiba which contains more local scenario and situation in the game.

Unlike monopoly, 'Catur Bistari' promotes the knowledge and concept of business according to the Islamic approach. The objectives of the game are to instill interest and awareness among society especially the younger generation in the financial management aspect and entrepreneurship. This is in hope to make entrepreneurship as the preferable choice of career [14].

In Islam, to engage in business is to perform an obligatory duty (*fardu kifayah*). If there is no entrepreneur in a society, the whole society is deemed to be sinful. That is how serious Islam perceives and encourages entrepreneurship. According to Dr. Omar, "Entrepreneurship is in fact a part of Islamic culture and Prophet Muhammad (pbuh) and his companions are examples of this," [15]. The Prophet himself is an entrepreneur who trade goods own by Siti Khadijah to as far Syam which is today known as Syria. Profits are encouraged in order to prosper the society through donations, taxes, zakat or alms and others. While the capitalism concept that is widely used today is criticize for being unfair and incompetent of the distribution of wealth, propensity towards market monopoly because most business are purely profit oriented and wealth

accumulation for the business owner regardless on the effect to others and society at large.

There are a few rules of ethical discipline according to the Islamic approach that promotes good manners in doing business transaction which are earning legitimate (halal) earnings, trade through mutual consent, truthfulness in business transactions, trustworthy in business transactions, generosity and leniency in business transactions, honoring and fulfilling business obligations and fair treatment [16]. In other words, the pursuit of wealth must be accompanied by good intention, legitimate means, proper management and earnings are put to good cause.

#### V. GAME DEVELOPMENT

In the game industry today, there are lots of well-established genres such as real-time strategy and first-person shooters. Game genre is central especially in delivering the message or information behind the game. For the entrepreneurship game, there are two viable genre options. First, is the abstract game which according to Laramee “represents a real-life situation in minimalist fashion and most table top board game fall within this category” [17]. Tasks or challenges in the abstract games usually related to the players and require the simplicity in design and technology. The second one is edutainment which is derived from education and entertainment. It is used to depict assorted forms of amusement that also educate. The challenges in this genre are to design the difficulty and content of the game. This is because developers need to understand the needs of the target player which usually are the children.

The pros of having a game genre are it is been done by someone else before. Therefore one could study their work and learn from it. The genres also have a readymade audience so it is easier to market and promote the game. On the other hand, the drawback of having a specific genre is it restricts the game developer’s creativity because the target players has accustomed to the standard feature of a particular genre.

Game mechanics are the choices and conventions that have been created with consequences and objective in mind. Consequence here means decision made by the player will give impact to the player and the game as a whole. While objective here refers to the intention of the particular task either to deliver certain message to the player or teach the player about something. The player skill is developed with the facilitation of the game mechanics [17]. Other than that, significant game mechanics also lead to unforgettable and exciting multiplayer interaction. This is in line with the objective of the game to teach and promote entrepreneurial skill to the players. Too many game mechanics will lead to boredom and players will be too informed of what is going to happen next.

Two important aspects in designing a level inside a game is the level duration and the relationships between levels. It is good to split the game into several levels but the player must be able to complete at least one level in a single sitting. Therefore the duration must be suitable. For casual gamers, they usually play games intermittently between their pastimes and their

daily routine. A good benchmark on the time they spent on playing a game is 30 to 60 minutes which is the same as the duration of a television show [17].

One way or another, playing games will leave a huge impact on the sensory perception on various levels such as release tension or learn new things. Playing a game that contains scenarios will train the player to focus and response to every situation. This will help improve the sensory stimuli to respond accordingly. Gaming is safe and permits to do what is either impossible or undesirable in real time [19]. Games also contribute a great deal of social development [2]. Many people especially children have which have problems at home, difficulty or shyness problems find it difficult to interact with other. By playing games, players need to interact with the other playmates. Thus, this will help one overcome the difficulty in socializing with others. There are always rules that players need to follow while playing games. These rules will teach players to follow certain limits and levels of self control [2]. Games that require players to take turns will educate players to pay more attention and use the waiting time to strategize. As the players grow up, the games they play will be more complex and require more social skill and teach them a higher level of self control. Through emotional excitement and intense game situation will teach the student about self-control and moral reasoning. This is because players need to follow regulations, chose between fair and unfair and response to those choices accordingly. All these benefits will coach the players to be a better person that react to situation accordingly. They could also socialize with others without any problem and become a person with high integrity.

In a nutshell, game could be an excellent medium to promote and expose entrepreneurial skill. It does not only contain the element of entertainment but also have an education purpose behind it. Elements of Islamic business approach can be implemented through the game mechanics inside the game. Interaction among players with the game will help players to acquire the knowledge about business and ethics. This will help them to understand what entrepreneurship is about and build their confidence to become an entrepreneur as well in the future.

#### VI. USER REQUIREMENT AND GAME DEVELOPMENT

Two visits had been conducted to Bistari Young Entrepreneur Sdn. Bhd. to get their view as the developer of the game. Bistari Young Entrepreneur Sdn. Bhd. is a subsidiary of Johor Corporation. They came up with the idea about game from their work scheme. The levels in the game represent how employees in the organization are encouraged to take up entrepreneurship and open a business. The board game was introduced by them through a real board game to students at universities in Malaysia and was distributed to fast food restaurants in Malaysia for customer to play while waiting for their food. The idea of making it a digital game was proposed to them and few prototypes were demonstrated to them. The name ‘Catur Bistari’ was used as the same name as it is in the board game, which means ‘Intelligent Chess’.

During the second visit, the game at that stage was not completed yet but contains major functionality of the game. The aim of it was to gather as much feedback as possible before completing the game to avoid unnecessary changes at the end of the development. Fig. 1 shows the screenshot of the initial prototype.

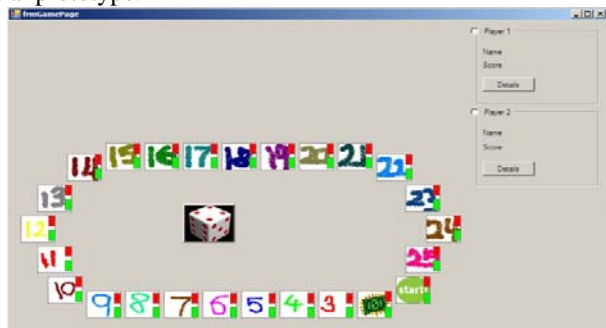


Fig. 1 Screenshot of the First Prototype

Some of the feedbacks from Bistari Young Entrepreneur Sdn. Bhd regarding the current stage of the game are the dice inside the game does not resemble the real dice which have 12 sides, the layout of the level inside the game should resemble the real game because it is the symbol of the game, pictures are allowed to replace the wording inside the path layout, suggestion to include different level of difficulties of task as to accommodate different level of players, change the token that represent the players and too much pop up to display the task of the game. All of these feedbacks were considered and changes were made. Fig. 2 shows the screenshot of the changes that has been made.



Fig.2 Screenshot of Second Prototype

The column on the right side is the scoreboard which will be visible by clicking the 'Details' button. The yellow path represents one of the levels in the game. There will be two parts of the game which are static and dynamic. Static here refers to something that is fix or not moving. These are the board game itself and the functionality buttons such as main menu and exit button. The second one which is dynamic refers to something that is changeable. These are the scoreboard, which will change according to the players gain and loss and the dice. There will also be an indicator that will indicate where the player is currently position on the board game. This is where the fundamentals of the game genre and level are implemented. For this 'Catur Bistari', the suitable game genre is the abstract game and it will be divided into two levels which uses the storyline module.

Abstract game is chosen because this game will resemble

the life of a typical adult where in level one, that person needs to work and earn a living. The same as in the real life, there are bills and expenses that the player will encounter and need to pay. The player also needs to accumulate wealth through buying and selling shares or small businesses. As this game uses the storyline module, level two is a continuous journey of the adult from his normal working life to becoming an entrepreneur. In this level, the player needs to own one business and run it making sure that it will be profitable. There will be operation cost, performance check and also social responsibility that need to be fulfilled. Fig. 3 shows the flow of the game.

### A. Rules of Game

In Employment level, the objective is to portray an average Joe life. As a normal employee, he or she needs to spend some amount of money to buy essential daily items. Players able to increase their financial by investing or buying real estate which will help them proceed to the Startup level. Player will start at the start box and receive salary each time as he or she pass through salary box. There will be two instructions cards which are necessity and investment. Necessity card is a type of daily expenditure where player need to spend some of their money for personal goods and services. Investment card is making choices in investment to accumulate assets and increase fund to do business. There are also some obstacles that will be put inside the individual boxes on board game such as Dishonesty, Punctuality and Late Submission where for each of that, there will be a punishment such as miss a turn. Besides that, there are also rewards given such as Bonus and Increment where player able to collect extra cash for their saving.

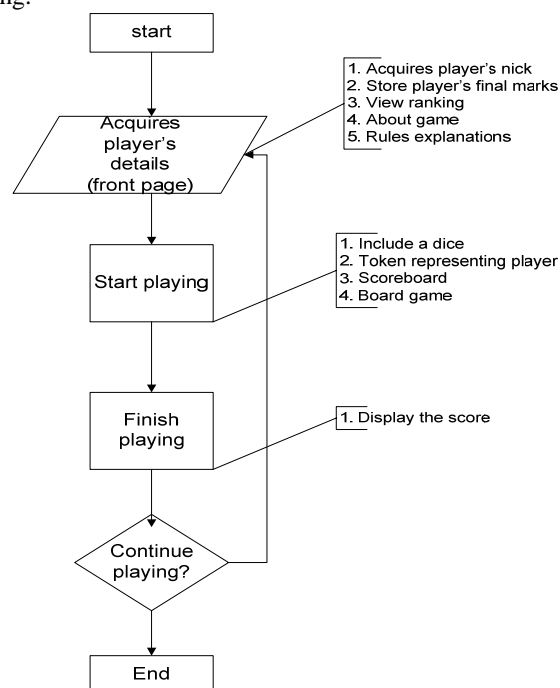


Fig. 3 Basic flow of the game

To precede to Startup level, the player needs to save up until certain amount for example RM10, 000, chooses one business startup and clear every debt and loan if any. The game can be stop or end after players able to reach the Startup level. The time duration to reach it will be around 90 minutes. The winner will be determine according to the assets accumulated and value of charity done by the player.

### B. Values in Game

Today, computer game is not merely for pure entertainment. In the game market there are many games that are incorporated with academic syllabus to educate its users. Games such as teaching academic content like mathematics and sciences or games that teach learning experience as in flight simulation to pilots are some of the examples. According to Barr, this trend or phenomena where games are used to teaching is continuing to demonstrate that computer games can be leverage to serious purposes [12]. Playing computer games will definitely expose the user to values or characteristics depicted as Semiotic Square shown in Fig. 4. Based on the square, 'success' is opposed by 'failure'. The square also visualizes the idea of 'not success' and 'not failure'. The point here is a big different between not succeeding and failure. For example, if one does not achieve the business target of the entrepreneurship game that does not mean that person is a total failure in doing business. The square aids by understanding the concept in a different manner. Thus it helps looking and success doing business in different way.

Thus, by having certain rules and tasks that the player need to follow or achieve, these will instill value into the player. If the player are not able to complete until the second level, that does not mean that player has no chance in succeeding doing business. Perhaps that player would far better play in different types of business.

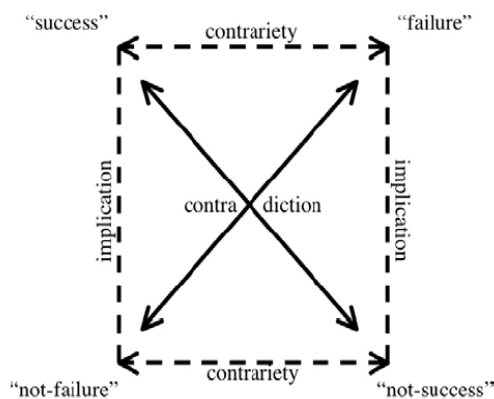


Fig.4 Semiotic square on concept of success

The game will be developed as a multiplayer game using one computer only. This is because, by playing a game using single computer, players will definitely interact with each other. They can have casual conversation on discussion about the content of the game itself. Either way, they will share knowledge among them. According to Tychsen and Smith, "When players share a single screen they communicate more

than when each person has their own monitor, indicating a direct effect of the representation of the game medium on player communication" [13].

### VII. CONCLUSION

The entrepreneurship programs in schools could be more successful with added fun learning approach such as simulations and games. Board game provides a platform where player could learn and have fun at the same time. On the contrary, the number of entrepreneurship board game which is base on the Islamic business approach is limited. Therefore, there is opportunity to provide this segment with the product or game that suite them. The development of this entrepreneurship game is to study and apply entrepreneurship board game and Islamic business approach into the game. This will help to expose players to Islamic entrepreneurship in a fun and interactive manner. There are lots of issues regarding how to develop the game in order to properly convey the message to the players such as game genre, game mechanics and level design. The entrepreneurship and Islamic approach are embedded in the game through tasks and rules that the player need to accomplish. Each of it is crafted to simulate the real life environment so that player can easily relate with them. It is recommended that 'Catur Bistari' game be expanded to many levels of Islamic finance in order to disseminate the understanding of knowledge and technical of the said matter to all levels of generation especially the young ones. Only by representing it in a much more interesting manner; thus in a digital board game; can attract users as young as students in high school to be familiar and exposed with the current Islamic finance/banking method in Malaysia.

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