

WHAT DO THEY LIKE AND DISLIKE FROM GAME-BASED ENTREPRENEURSHIP LEARNING? A QUALITATIVE STUDY

Muhamad Ahsan^{1*}, Aun Falestien Faletihan²

¹UIN Sunan Ampel Surabaya, Indonesia

²Vrije Universiteit Amsterdam, Netherlands

*e-mail: m.ahsan@uinsby.ac.id

Abstract: One of the ways to raise an entrepreneurial spirit through learning processes is the use of game simulation. Learning materials delivered using game simulation are expected to improve knowledge, understandings, and insights related to entrepreneurship. This study aimed to examine individual's understanding of game-based entrepreneurship learning based on the expressions of like and dislike. Data of this study were collected by means of an open-ended questionnaire through a survey conducted for nine years (2011-2019). As many as 441 students participated in the entrepreneurship game called "Start and Improve Your Business (SIYB)" at a university in Indonesia. The collected data were analyzed qualitatively using NVivo 12plus. The results showed that participants liked the game because it could increase their entrepreneurial spirit, skills, insights, and mindsets. However, what participants did not like about the game was related to its' characteristics, the personal issues that it came out with, and the teamwork in the game. This study contributes to the development of a game-based entrepreneurship learning model by identifying participants' interests and discussing the strengths and weaknesses of the game implementation.

Keywords: *entrepreneurial insights, entrepreneurial mindsets, entrepreneurial skills, entrepreneurial spirit, game-based entrepreneurship learning.*

APA YANG MEREKA SUKA DAN TIDAK SUKA DARI PEMBELAJARAN KEWIRUSAHAAN BERBASIS PERMAINAN? STUDI KUALITATIF

Abstrak: Salah satu cara membangkitkan semangat berwirausaha melalui proses pembelajaran adalah dengan simulasi permainan. Materi pembelajaran yang disampaikan melalui simulasi permainan diharapkan dapat meningkatkan pengetahuan, pemahaman, dan wawasan berwirausaha. Penelitian ini bertujuan untuk mengeksplorasi pemahaman individu atas pembelajaran kewirausahaan berbasis permainan melalui ekspresi suka dan tidak suka. Data dikumpulkan melalui angket terbuka melalui survei yang dilakukan selama kurun waktu sembilan tahun (2011-2019). Sebanyak 441 mahasiswa yang terlibat game kewirausahaan "Start and Improve Your Business (SIYB)" di sebuah perguruan tinggi di Indonesia. Data yang terkumpul dianalisis secara kualitatif dengan menggunakan NVivo 12plus. Hasil studi menunjukkan bahwa partisipan menyukai permainan karena dapat meningkatkan semangat, keterampilan, wawasan dan pola pikir kewirausahaan. Namun, partisipan tidak menyukai beberapa aspek dari permainan kewirausahaan seperti karakteristik permainan, isu-isu personal yang diangkat, dan kerjasama tim dalam permainan tersebut. Studi ini berkontribusi terhadap pengembangan model belajar kewirausahaan berbasis permainan melalui identifikasi minat yang dirasakan partisipan dan juga pembahasan atas kelebihan dan kelemahan yang muncul dalam pelaksanaan permainan.

Kata Kunci: *pengetahuan kewirausahaan, pola pikir kewirausahaan, keterampilan kewirausahaan, semangat kewirausahaan, belajar kewirausahaan berbasis permainan.*

INTRODUCTION

Entrepreneurship subject develops quickly and is widely taught in many higher education institutions in the world (Solomon, 2007). It also has various methods to present the basic concept

of entrepreneurial understanding. However, this subject's effectiveness of producing entrepreneurs is still debated. The debate arises because of the question: can entrepreneurship be taught? The question is asked because of the

opinion that an entrepreneur can only be born and cannot be taught through education (Henry, Hill, & Leitch, 2005; Wilson, 2008).

Many scholars attempt to ensure to build entrepreneur through education. Some studies show that entrepreneurial education has contributed to entrepreneurial interest (Hutasuhut, Irwansyah, Rahmadsyah, & Aditia, 2020; Izquierdo & Buelens, 2011; Souitaris, Zerbinati, & Al-Laham, 2007; Fayolle, Gailly, & Lassas-Clerc, 2006; Lüthje & Franke, 2003; Peterman & Kennedy, 2003; Kolvereid & Moen, 1997); intention and mindset (Ndou, Secundo, Schiuma, & Passiante, 2018) and motivation (Othman, Othman, & Juhdi, 2020; Mahendra, Djatmika, & Hermawan, 2017). The studies' findings confirm the opinion that entrepreneurship evidently can be taught.

Entrepreneurial sector has different and unique culture, thus its learning process should be designed different from general classroom learning. The crucial elements such as attitude, skill and action sometimes cannot be taught through traditional classroom session (Sidhu, Johnsson, Singer, Suoranta, 2015). The "Enterprise culture" which all this time covers business educational values at higher education, on the other hand, becomes the antithesis. The current entrepreneurial education seems not to be well-prepared since it tends to be passive (Gibb, 1987), emphasizes on theories and conceptual thinking more, with too much dissemination of information, has too general focuses of discussion which are in too much contrast with the reality that entrepreneur needs intuition and acumen despite limited information to solve problem under time related pressure (Bellotti *et al.*, 2012; Henderson & Robertson, 1999). Therefore, for more effectiveness, entrepreneurial learning should be more flexible, more active and emphasize experienced-based approach (Gibb, 1987).

One method to effectively teach entrepreneurship is through game. The study of game based learning is indeed still new, which is less than three decades (Tasnim, 2012), and needs further development. Until now, some researches show that learning in the form of game simulation is able to accelerate skill development such as strategic-managerial thinking, long-term vision, detailed planning, communication, collaboration, controlling

the motivation to feel challenge all the time, negotiation, numeracy, decision making, data management, and high level cognitive thinking skill (Bellotti *et al.*, 2012; de Freitas, 2006; de Freitas & Jarvis, 2007; Pivec & Dziabenko, 2004; Pivec, Dziabenko, & Schinnerl, 2003). Through game, individual will find it easier to express and understand themselves, thus the learning will be more interactive, contextual and specific (Sedano, 2012).

Game simulation in entrepreneurial learning may be categorized as a problem-based learning (PBL) method since the process requires student to serve as the center of learning and student is asked to solve the problem of target to be achieved or to solve the case given by facilitator. PBL approach may positively contribute to student, that they are able to understand any complex concept and learn to think creatively of entrepreneurship when they are appropriately facilitated (Vaidya, 2009). Facilitator's role becomes important since facilitator presents the existing problems, facilitates problem solving process, requires metacognitive thinking, does not give information related to the existing problem, and comprehensively assesses the learning content and learning process. On the contrary, participant's role includes learning in small group, learning individually and working in team and collaborating (Savery, 2019).

According to the result of researches in the last three decades, planning entrepreneurship game in entrepreneurial learning is one effective method to educate and instill entrepreneurial values. Many basic skills of business and cognitive thinking may develop after an individual is involved in entrepreneurship game (Bellotti *et al.*, 2012; Tasnim, 2012; Pivec *et al.*, 2003). Some simulations of entrepreneurship game use software (Huebscher & Lendner, 2010) in the implementation, but there are weaknesses in the process, since participant cannot have direct communication. The advantage of simulation with software is its ability to present a complex environment like that of a real company. This idea arises because of the concern about minimum analysis on the context of real world which may help student in practical situation (Allegra, Fulantelli, Gentile, La Guardia, Taibi, & Zangara, 2010). Delivering materials of entertaining and creative game, entrepreneurship game is capable of making

participant easily understand, discuss, apply and take actual actions. The combination of the process and method may be in the form of course work, game, role play and simulation, design based thinking, reflective practice and ‘case study method’ (Ellington, Gordon, & Fowlie, 2013; Neck & Greene, 2011; Blenker, Dreisler, Faergemann, & Kjeldsen, 2008; Fayolle & Gailly, 2008; Pittaway & Cope, 2007).

However, although studies on entrepreneurship game have started appearing, only few explore the feeling regarding individual’s interest in the game played, while the studies may help a structured process of entrepreneurship game development since it may improvise and correct the game’s elements from game participants’ direct input. Thus, entrepreneurial education process through game may be easier. Classroom learning will have more varied forms, not only limited to theory which may make participant bored (Neck, Neck, & Murray, 2018) and cause non-achieved learning objective, since they are not interested from the start. Meanwhile, in entrepreneurial practice, interest serves as an important triggering part before an individual moves further and decides to build a startup business.

This study aims at exploring what individual feels in understanding entrepreneurship through the business game “Start and Improve Your Business (SIYB)” standardized by the International Labor Organization (ILO) body. This study is expected to illustrate what the participants involved feel during and after entrepreneurship game simulation.

METHODS

This research used a descriptive-qualitative approach to explain the phenomena occurring in the classroom during and after the game simulation was completed. The setting of the study was taken from game simulation situations that were played periodically (once every six months) at a higher education institution in Surabaya city, Indonesia. The simulation was played through game tools that were standardized by ILO and translated and played in more than 90 countries. The game facilitator had been trained in playing the game simulation. The simulation was called Start and Improve Your Business (SIYB) tools consisting of three levels, namely business, demand and

supply and marketing cycles. In this research, part of the game simulation being played was that of business cycle, aiming at giving simple understanding to participants, such as making business plan, evaluating business plan, buying raw material, performing production, selling product, in contact with banking world, and buyer. The simulation was always dynamic and often with changing, unpredictable business situations. Principally, each small group involved in the game played their function as entrepreneur. The game takes averagely 2.5 hours to complete.

The SIYB game simulation was played by students in the second year (semester 4) when they take entrepreneurship subject from 2011 to 2019. The number of players varied from year to year because of difference in the number of students taking the entrepreneurship subject. Based on the data entry obtained, the number of players in the game simulation in the nine years were 441 students with 49 participants per year on average (Details on every year are: from 2011 to 2019 are 38, 20, 60, 145, 73, 21, 20, 37, 27, respectively).

After the game ended, the participants were asked to express their feeling during the game simulation and to discuss anything found in the game and evaluate any occurrence in the game simulation. Further, the participants were given with one-page evaluation sheet as a reflection of open inquiries. The provided reflection sheet was an open-ended questionnaire with the following questions: What do you like of the game? What do you not like of the game? Are you sure to start a business after this game? What do you suggest of the game simulation? The reflection sheet given to student does not contain name and sex columns in expectation that the participants would not be hesitant to write what they felt during and after the game honestly. Although this research started from questionnaire data, but the data collected were treated qualitatively since the inquiries were open (Flick, 2014).

The data analysis was conducted on the feedback sheet of the open questionnaire as the source of data. The analysis process was conducted using the computer-assisted qualitative data analysis software. The data (handwritten questionnaires) were rewritten, stored, and coded systematically using QSR NVivo version 12 Plus. This process was also

a part of triangulation to see the information consistency delivered and discussed after the game simulation is completed by writing an open-ended questionnaire. The data were developed inductively by adopting the analysis method of Gioia, Corley, & Hamilton (2012). The obtained data from questionnaires were coded as the initial coding (first order) for all categories, still by using the dictions used by the participants. The data were then reanalyzed and compared as the second order to observe the similarity and classified into certain higher categories. In the end of phase, the aggregate dimensions which theoretically formed the data structure were brought up after the similarity of pattern of all inquiries of the game simulation participants was found. Although there were 441 participants, the coding found reached a higher number, since many participants gave more than one reasons to express their feeling in the game simulation.

RESULTS AND DISCUSSION

Results

The research result showed that the participants expressed their enjoyment of learning entrepreneurship through the game for two apparent reasons. First, they enjoyed the game playing. Second, they liked the game for its positive effect they perceived after participating in the game. Meanwhile, they disliked the game because of the game's characteristics, personal issues, and teamwork factors. The following

sub-headings describe in more details about these two themes.

What do They Like from Game-Based Entrepreneurship Learning?

Game Process

The participants tend to like the process of game-based entrepreneurship learning for five factors. First, they can understand entrepreneurial ways in general. Second, they can directly, technically perform business simulation. Third, they can communicate with others. Fourth, they can practice brainstorming. Fifth, they can understand business ethics.

Of the five factors, the reason of obtaining general entrepreneurial understanding and the opportunity to practice business simulation are the most dominant factors which make the participant like the entrepreneurship game. An example of the expression in questionnaire feedback: "the business simulation, especially in the part of setting the velocity of money and production, as well as saving and finding daily life needs". Based on 441 participants' feedback notes, the two factors have over 100 items of coding reference. The reason of understanding business ethics is the lowest out of the five factors, since it has code of reference only from one student. Figure 1 visually explains the distribution of students' reasons of liking entrepreneurship game, from class 2011 to class 2019.

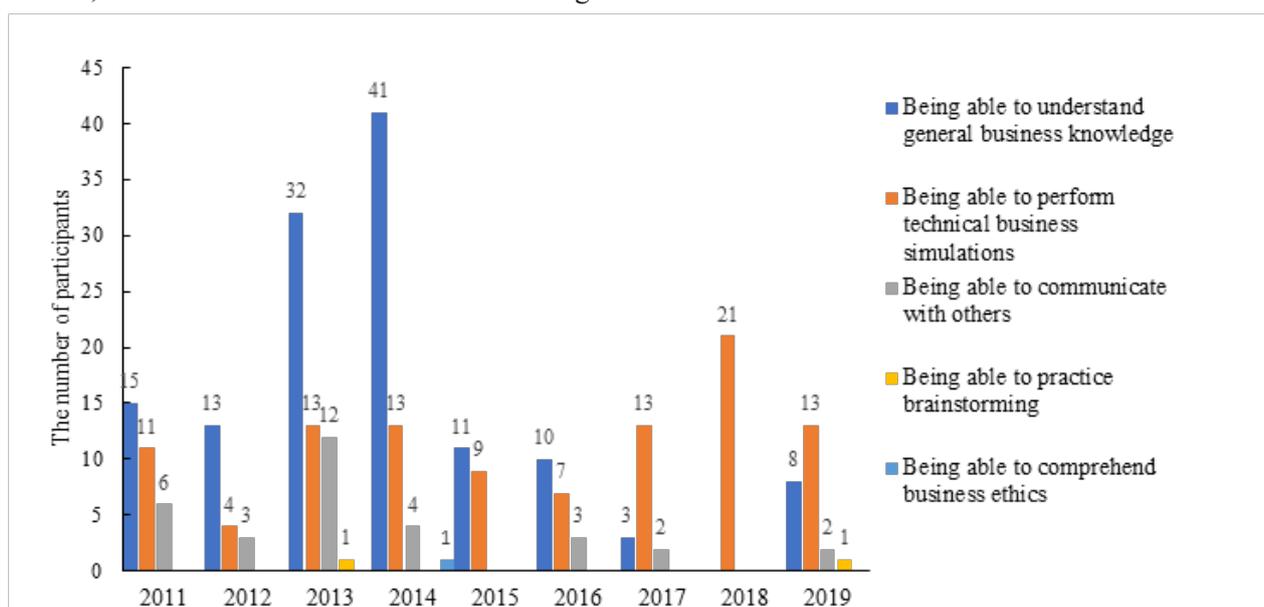


Figure 1. Reasons why They Like the Entrepreneurship Game Simulation Process

The participants' most dominant feeling making them like the entrepreneurship game is that they have acquired new understanding of entrepreneurship. For example, as expressed by a participant in the questionnaire feedback, "the knowledge of how to do entrepreneurship, add insight and knowledge of business, the twists and turns of life as entrepreneur". Participant can know some things such as the importance of spirit in entrepreneurship, entrepreneurial way of thinking, sensitivity and accuracy in business, the twists and turns of entrepreneur's life. In addition, they can acquire new insight of business process cycle and general entrepreneurial techniques.

Besides the factors, participants can also feel they are directly, technically involved in practicing business simulation, since most of the participants may have not had real business, thus the entrepreneurship game is able to present experience of business practice to ordinary people. In the game process, the participants feel the 'delight' of business simulation through practices of business planning and calculation, capital and financial management, healthy competition, and production cycle process. In addition, the participants also feel happy with the surprises in the game, such as complexity of business, decision to take risk, and bankruptcy anticipation. The technical matters in business simulation practice evidently can encourage the participants to feel business experience like the real world, although it is only a classroom simulation.

In addition to the two factors, the participants also like the game since it gives them the chance to practice communication with others. This is implemented through team solidarity, inter-individual discussion model, and ideal process of business communication message delivery. In addition, the factors of opportunity to do brainstorming and reflection of business ethics also make the participants like the entrepreneurship game, although the two factors are only felt by a few of participants.

Positive Impact after the Game Ends

Besides liking the game process, the participants also feel the positive effect after the

game ends, although the positive effect after the game ends obtained after the game ends is smaller than the positive effect during the process factor. Out of 441 participants involved in the game simulation, the data set only presents 27 codes of reference of reason they like the game for the positive effect after the game ends.

The research result also describes that the participants are impressed by the positive effect of game-based entrepreneurship learning because of five factors. First, the entrepreneurship game motivates them to do real business. Second, the participants get an understanding of business game characters. Third, the entrepreneurship game teaches sensitivity and accuracy. Fourth, the game simulation stimulates creative thinking. Fifth, the SIYB game stimulates visionary thinking.

Out of the five factors, the strongest after-game reason is that the game motivates the participants to do real business. For example, a participant's statement in the open questionnaire as follows: "it is quite useful to drive entrepreneurial spirit, train us to be real entrepreneur". Participating in the game until the end, the participants feel that their business instinct gets motivated, their entrepreneurial soul awakened, and their liking of business world increased. The research data also show some unique trend related to response between generations. Business motivation factor arises among the 2011 student participants more, as presented in Figure 2.

Figure 2 explains four other factors in addition to business motivation, although the code number is not high. The participants also like the game since they can understand the characters of business game, such as the levels, stages and simulation process. In this factor, the participants still seem to be impressed by the characteristics of the entrepreneurship game they have played thus they still remember the feedback they give after the end of the game as a characteristic of the game. For example, an entrepreneur must have reserve fund for unexpected needs. Besides the factor, the participants also like other positive effects induced, such as that the business game teaches student to keep sensitive, careful, think creatively and have visionary view.

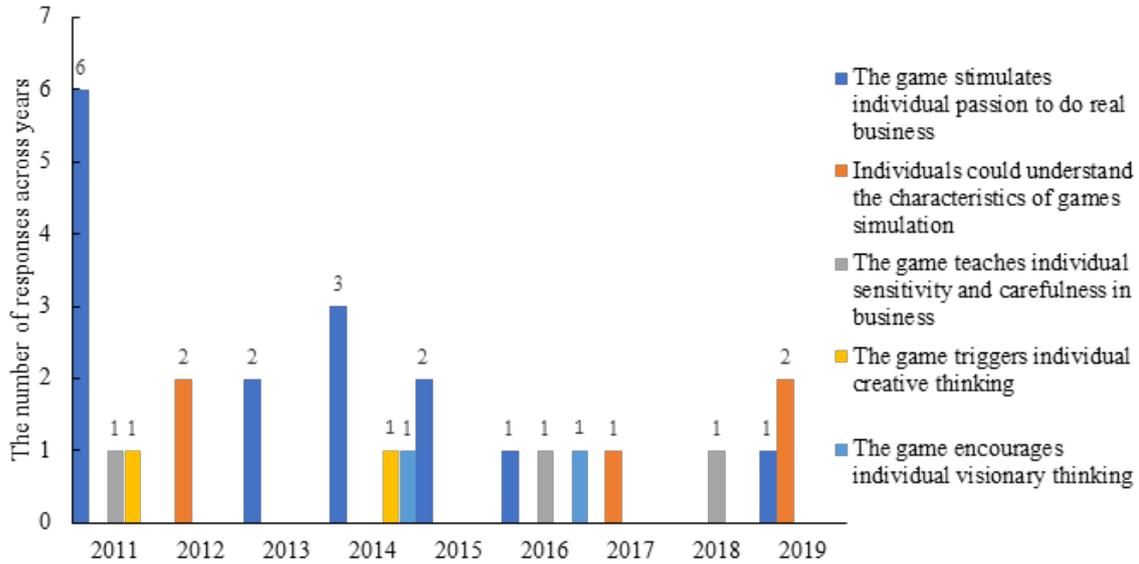


Figure 2. Reasons why They like the Impact after the Entrepreneurship Game Ends

What do They Dislike from Game-Based Entrepreneurship Learning?

The research result shows that besides liking the entrepreneurship game, the participants do not like a number of matters of the game simulation. The finding data show that the participants from 2011 to 2019 do not like the entrepreneurship game for three factors. First, they do not like the game’s characteristics. Second, they do not like it for personal issues. Third, they do not like teamwork in the game. The first two factors are dominant the participants

to dislike the entrepreneurship game. For example, a participant’s feeling expression in the questionnaire feedback: “too strict business competitor or competition, debate between group members, lacking of participant’s involvement”. There are more than 170 codes of reference in each of the two factors. The third factor is only a complement since it only contributes 23 codes of reference. Interestingly, the research finding also discloses that 9 participants do not have any reason to dislike the entrepreneurship game. Figure 3 helps illustrate the data structure.

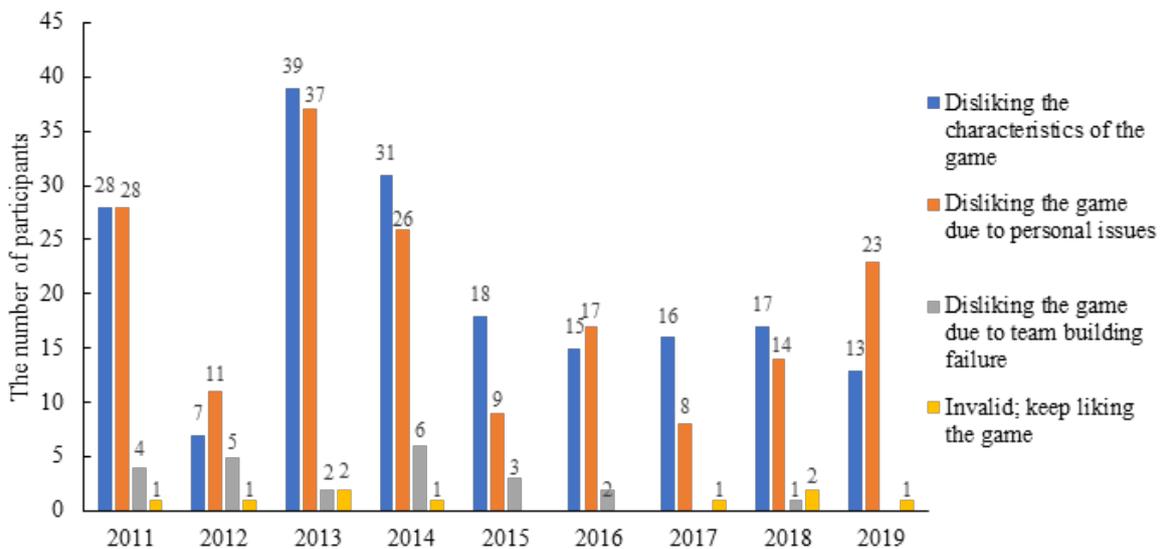


Figure 3. Reasons why They Dislike the Entrepreneurship Game

Dislike the Game Characteristics

The most dominant factor for the participants to dislike the entrepreneurship game is the game's characteristics. There are five sub-factors underlying this reason, as presented in Figure 4. First, they do not understand the game stages. Second, they do not the game's tempo. Third, they do not like the game's rule. Fourth, they do not like the game's location. Fifth, they do not like the game tools.

A classical saying says, "If you do not know it, you will not love it." The most dominant reason that the participants dislike the game for its characteristics is that they do not understand a number of stages of the game. For example, the following feeling expression: "when a plan is not as what is planned, product quality test, how complicated the business cycle is". Based on Figure 4, there are 157 codes of reference from participants with this reason. In general, they do

not understand the game stages since they are not capable yet to arrange a business plan, not understand the importance of product quality, not understand good financial management, not know banking procedure, and not able yet to arrange an effective production flow.

Besides no understanding of the game stages, the participants dislike the game characteristics since they do not like the game's tempo, such as too short and fast duration of implementation. In addition, some participants also dislike the game rules because of the complicated procedure and non-clearly understood rules. Some participants also dislike it for game's non-conducive location factor. The comfort of classroom as the place where the game is implemented greatly influences them. The quality of game tools also affects them. A few of the participants dislike the game since they happen to receive insufficient game props.

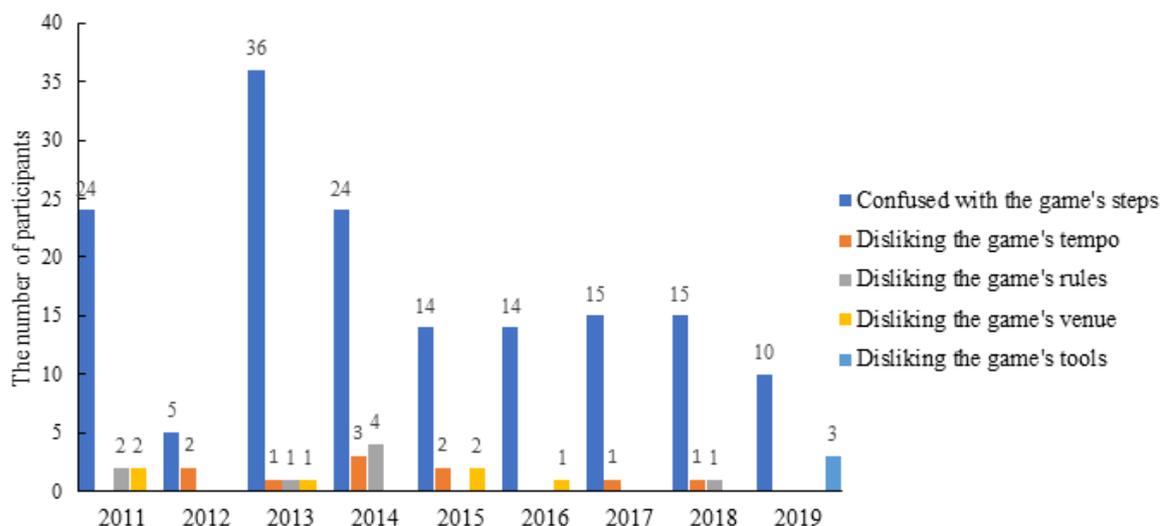


Figure 4. Sub-Reasons why They Dislike the Game Characteristics

Dislike the Game for Personal Issues

The second most dominant factor that the participants dislike game-based entrepreneurship learning is personal issues. There are three sub-factors to explain this individual problem, as illustrated in Figure 5. First, they do not have good business skill yet. This reason is the most influential since it has 103 codes of reference. For example, a participant's expression in the questionnaire: "group job description, many inactive members, buyer's rejection". Second,

they do not have good business knowledge in general. Third, they do not have good attitude yet as an ethical businessman.

For the first sub-reason, the participants basically do not like the game since it does not have four skills: business planning skill, financial management skill, product evaluation skill, and socialization with team skill. Out of the four skills, the business planning skill is the most influential sub-factor since many participants feel they do not have this skill yet.

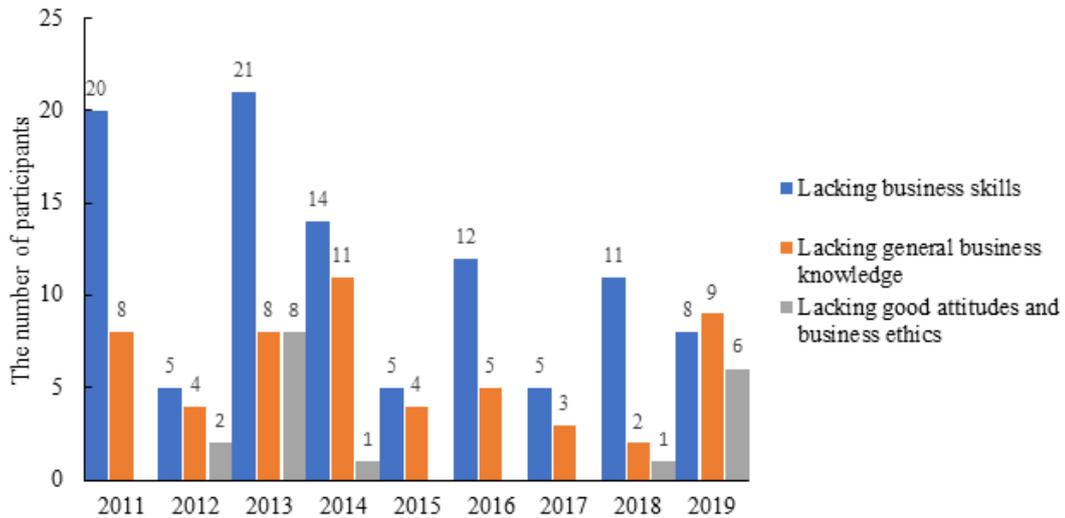


Figure 5. Sub-Reasons why they Dislike the Game for Personal Issues

Regarding business insight or knowledge, the participants feel their self-limitation in understanding business flow, media and assets needed, and self-competence quality they should have as entrepreneur. The lack of general business insight may evidently trigger their dislike of the game.

Further, the lack of ethical attitude as businessman also makes them to dislike the entrepreneurship game. Our data show there are five participants commenting on this ethical issue. They feel they do not yet have the patience in buying practice, orderly queue, honesty and sportiveness in business competition. The occasionally non-conductive game situation that it involves many participants makes them act fraudulently beyond the proper rule.

Dislike Teamwork in the Game

The third factor making the participants to dislike the entrepreneurship game is the form of teamwork in the game process. Although this factor’s influence is low, with only 23 codes of reference, but the sub-factors are evidently varied. There are four sub-factors making one unable to do well in teamwork, namely no team solidarity, too big group size, inactive individual, and group conflict.

Figure 6 describes these factors visually. The research finding also reveals an interesting trend pattern. The dislike of teamwork factor is not dominant in the last three or four years. It only appears in the initial generation era of the simulation game, that this factor related perception appears only from 2011 to 2015.

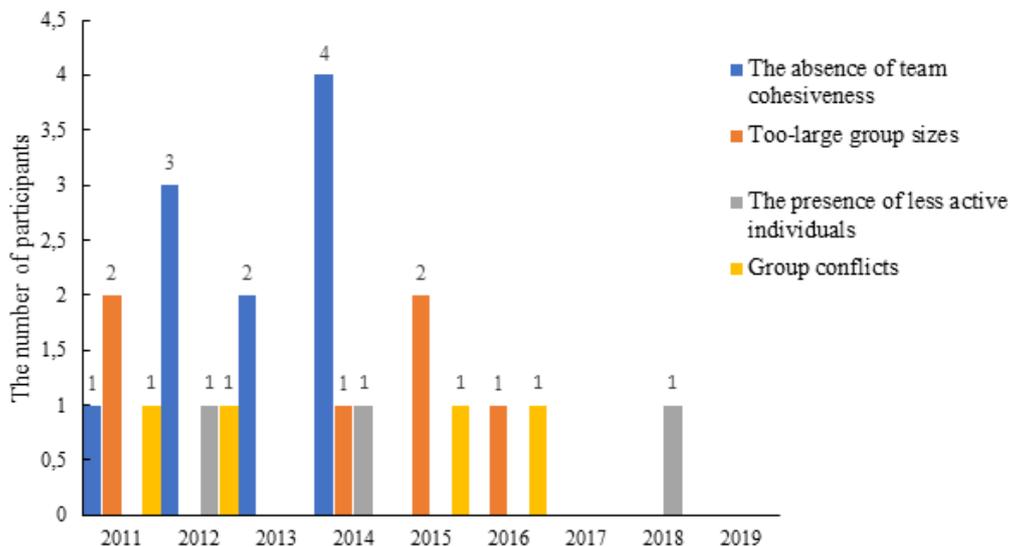


Figure 6. Sub-Reasons why They do not Like Teamwork

Discussion

From the research result explained, there are some important points of the entrepreneurship game implementation. Our type of data structure shows that the factor making a person like a game tends to be a process model, while the factor to dislike a game is manifested more in variance model structure. An individual tends to like a game with an event chronological reason, from the process of implementation to the impact generated after the game. On the contrary, an individual dislikes a game because of reasons which are related to type of level of predictors. As commonly known, an individual tends to dislike a game for a range of reasons from game characteristics to personal issues, and teamwork with others or interpersonal factor.

In addition, our research finding shows that the game participants feel they start having entrepreneurial characteristics. This shows that learning entrepreneurship through the game, the participants acquire entrepreneurial mindset just like an entrepreneur. Visionary mindset and readiness to anticipate risks are some of the outstanding mindsets. Besides, they also acquire general entrepreneurial knowledge. The important point of learning entrepreneurship through game is that the participants have been stimulated to build strong entrepreneurial skills and entrepreneurial passion.

Entrepreneurial mindset, knowledge, skills, and passion are the important elements one must have in order to focus on real business world. The four elements produced by the SIYB game with ILO standard evidently complete previous research findings on entrepreneurship game. Some previous researchers state that entrepreneurship game influences the development of entrepreneurial skills (La Guardia, Gentile, Dal Grande, Ottaviano, & Allegra, 2014; Allegra, La Guardia, Ottaviano, Dal Grande, & Gentile, 2013; Bellotti *et al.*, 2012), mindset, and knowledge (Sidhu, Singer, Johnsson, & Suoranta, 2015; La Guardia *et al.*, 2014; Huebscher & Lendner, 2010). One new thing in this research finding is entrepreneurial passion as another element felt by the game participants that has not been discussed much by previous researches. Entrepreneurial learning through game can evidently motivate an individual to directly perform real business practice. The passion is acquired by the

participants because they are interested in the simulation in the game and they become curious to apply it to real life.

Interestingly, observing figure 2, the reason that entrepreneurial passion makes individual like this game is evidently the most dominant in the initial generation of the game participants from early years, particularly in 2011. In our assumption, considering that the research setting is a campus in Indonesia, it is likely because entrepreneurial learning through game is still new at that time that the entrepreneurship subject is just introduced to the students in the campus. This condition helps build new atmosphere regarding entrepreneurial spirit. In the next stage, it may stimulate higher curiosity and interest that the participants get motivated to have a direct business practice after participating in the game, although in small scale. However, it is also necessary to study further the difference in interest between generations, particularly after observing figure 2. The question is like “why did the generation a decade ago have the tendency to be motivated more easily in business practice after they have been involved in game simulation than the next generation?”

Besides, similar studies which compare interest between generations is are needed to answer some interesting data produced by some figures in this research. For example, why individual’s dislike of the game for his non-suitability for teamwork is no longer dominant in the last three or four years. Does this mean current generation tends to have better cooperation or negotiation skills than the old generation? Therefore, it is recommended for the further research to conduct an inter-generation comparative study related to individual’s interest in entrepreneurship game. Such a study will be useful to the development of entrepreneurship game to accommodate all types of personality, including in anticipating introvert participants who has not social skill.

Another example is why only few game participants discuss business ethics, while this issue is crucial in entrepreneurial practice. The extreme finding that needs to be noted is that out of total participants, only one participant (.23%) expresses his positive opinion of business ethics and five participants (1.13%) express their opinion of how bad other players’ ethics or

attitude in simulation process is. Participants' perception of business ethics issue shows that in business, ethical discourse should be maintained. Among the issues expressed by the participants are their incapability to behave in orderly queue in buying simulation, cheating in playing, and coming late. That only few participants are able to observe the ethical issue shows their carefulness of observing sensitive business situation. This issue will get more interesting when studied further, that it can develop a business game model with main objective of training participants' discipline and work ethic. Business ethics element is something which is rarely found in the real business world.

The game participants' strengthening entrepreneurial passion and entrepreneurial interest confirm previous studies which state that entrepreneurial education, despite not taught through the game, have contributed to entrepreneurial interest development (Izquierdo & Buelens, 2011; Souitaris *et al.*, 2007; Fayolle *et al.*, 2006; Lüthje & Franke, 2003; Peterman & Kennedy, 2003; Kolvereid & Moen, 1997). Interest is a determining step before an individual decides to get into the real entrepreneurial world. This means that stimulating participants' interest and bravery in entrepreneurship through game simulation process is quite important in order to increase the number of business players, since the objective of entrepreneurship subject is given in the education world is, among others, to build new business players in balancing labor market that is unable to absorb all higher education graduates.

There are participants who do not like game in learning process. This is normal in classroom learning process. Entrepreneurial lesson cannot stand alone. Entrepreneurial lesson is supported by other subjects, such as marketing management, financial management, operational management, strategy management, human resources management, business communication, leadership and others. Participants' incapability to understand the supporting subjects before interacting in the entrepreneurship game may cause their disinterest in getting involved in the entrepreneurial game emotionally. This may be observed from the reasons they expressed in the survey. Although this game is performed in team, the incapability to act fast (for example, because the game is time limited) of individual

with less supporting knowledge may influence team performance in game competition.

Surprisingly, there were nine (2%) participants having no reason to dislike the game. They like the game at any condition. This illustrates that those nine participants seem to be ready with and enjoy the game simulation. It is possible that they have more insight in support of the entrepreneurship game than the other 432 participants (98%), making them seem to enjoy the simulation process better. In this regard, future research may be performed to examine any pre-conditions and requirements the participants need to master in order to play the entrepreneurship game optimally, such as the necessity for them to master some subjects in support of the entrepreneurial material.

The findings of this research can be used as the reasons that the entrepreneurship materials delivered through the game simulation can be further continued as a form of problem-based learning method (Vaidya, 2009) by continuously making improvements and adjustments with the situations. The improvements are not only made on the students as the research participants but also the facilitators in organizing the game rhythms, providing challenges in the form of target outcomes to compete in the game and delivering reflections as the lesson learned after the game simulation. Therefore, sustainable improvements should be made to fulfill the expectations to meet the real learning outcomes.

This game simulation is ideally played in small groups of between 15-18 participants and divided into three groups. The excessive number of participants beyond the ideal limits not only can disrupt the interactions among participants and oblige the facilitators to personally modify the game tools and result in shapes dissimilar to those made from the related factory. This has also made some participants less serious in answering the questionnaires as revealed in their questionnaires' answers as they were from a group obtaining the modified game tools (disliking the game because the obtained tools were different for the others received by the other groups). Throughout the nine years of game implementation, there are some opportunities for simulation which encourage our creativity because of the big number of participants in the class.

CONCLUSION

Game simulation in entrepreneurial lesson is still relevant to stimulate participants' interest in doing business in real world. This study serves to explore the expressions of individual's interest in (like and dislike) and understanding of entrepreneurship game simulation in entrepreneurial learning process. Interest is an important point for an individual to get into the real business world. What the learners feel of the SIYB game simulation is that they acquire visionary thinking skill (as entrepreneurial mindset), general entrepreneurial knowledge (as entrepreneurial knowledge), building entrepreneurial skills (as entrepreneurial skills), and having strong motivation to start business (as entrepreneurial passion). The things the participant does not really like of the game simulation, including game characteristics, personal issues, and teamwork, may be minimized through game development and strengthening the causative elements, such as giving an understanding of supporting subjects to the participants before taking the entrepreneurship subject and setting the ideal ratio of game participants in simulation process.

REFERENCES

- Allegra, M., Fulantelli, G., Gentile, M., La Guardia, D., Taibi, D., & Zangara, G. (2010, 29-31 October). *An agent-based serious game for entrepreneurship*. Paper presented at the 5th International Conference on Virtual Learning 2010, Romania, Europe.
- Allegra, M., La Guardia, D., Ottaviano, S., Dal Grande, V., & Gentile, M. (2013, 16-19 July). *A serious game to promote and facilitate entrepreneurship education for young students*. Paper presented at International Conference "Education and Educational Technologies", Rhodes Island, Greece.
- Bellotti, F., Berta, R., De Gloria, A., Lavagnino, E., Dagnino, F., Ott, M., ... & Mayer, I. S. (2012). Designing a course for stimulating entrepreneurship in higher education through serious games. *Procedia Computer Science*, 15, 174–186. <https://doi.org/10.1016/j.procs.2012.10.069>.
- Blenker, P., Dreisler, P., Faergemann, H. M., & Kjeldsen, J. (2008). A framework for developing entrepreneurship education in a university context. *International Journal of Entrepreneurship and Small Business*, 5(1), 45–63. <https://doi.org/10.1504/IJESB.2008.015953>.
- de Freitas, S. (2006). *Learning in Immersive worlds. A review of game-based learning*. JISC. http://www.jisc.ac.uk/media/documents/programmes/elearninginnovation/gamingreport_v3.pdf.
- de Freitas, S., & Jarvis, S. (2007) Serious games - Engaging training solutions: A research and development project for supporting training needs. *British Journal of Educational Technology*, 38(3), 523–525. <https://doi.org/10.1111/j.1467-8535.2007.00716.x>.
- Ellington, H., Gordon, M., & Fowlie, J. (2013). *Using games and simulations in the classroom: A practical guide for teachers*. London: Routledge.
- Fayolle, A., & Gailly, B. (2008). From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, 32(7), 569–593. <https://doi.org/10.1108/03090590810899838>.
- Fayolle, A., Gailly, B., & Lassas-Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: A new methodology. *Journal of European Industrial Training*, 30(9), 701–720. <https://doi.org/10.1108/03090590610715022>.
- Flick, U. (2014). *An introduction to qualitative research* (5th ed). London: SAGE Publications.
- Gibb, A. A. (1987). Enterprise culture - Its meaning and implications for education and training. *Journal of European Industrial Training*, 11(2), 2–38. <https://doi.org/10.1108/eb043365>.

- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods, 16*(1), 15–31. <https://doi.org/10.1177/1094428112452151>.
- Henderson, R., & Robertson, M. (1999). Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a career. *Education + Training, 41*(5), 236–245. <https://doi.org/10.1108/00400919910279973>.
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? Part II. *Education + Training, 47*(3), 158–169. <https://doi.org/10.1108/00400910510592211>.
- Huebscher, J., & Lendner, C. (2010). Effects of entrepreneurship simulation game seminars on entrepreneurs' and students' learning. *Journal of Small Business and Entrepreneurship, 23*(4), 543–554. <https://doi.org/10.1080/08276331.2010.10593500>.
- Hutasuhut, S., Irwansyah, I., Rahmadsyah, A., & Aditia, R. (2020). Impact of business models canvas learning on improving learning achievement and entrepreneurial intention. *Cakrawala Pendidikan, 39*(1), 168–182. <https://doi.org/10.21831/cp.v39i1.28308>.
- Izquierdo, E., & Buelens, M. (2011). Competing models of entrepreneurial intentions: The influence of entrepreneurial self-efficacy and attitudes. *International Journal of Entrepreneurship and Small Business, 13*(1), 75–91. <https://doi.org/10.1504/IJESB.2011.040417>.
- Kolvereid, L., & Moen, Ø. (1997). Entrepreneurship among business graduates: Does a major in entrepreneurship make a difference? *Journal of European Industrial Training, 21*(4), 154–160. <https://doi.org/10.1108/03090599710171404>.
- La Guardia, D., Gentile, M., Dal Grande, V., Ottaviano, S., & Allegra, M. (2014). A game based learning model for entrepreneurship education. *Procedia - Social and Behavioral Sciences, 141*, 195–199. <https://doi.org/10.1016/j.sbspro.2014.05.034>.
- Lüthje, C., & Franke, N. (2003). The “making” of an entrepreneur: Testing a model of entrepreneurial intent among engineering students at MIT. *R & D Management, 33*(2), 135–147. <https://doi.org/10.1111/1467-9310.00288>.
- Mahendra, A. M., Djatmika, E. T., & Hermawan, A. (2017). The effect of entrepreneurship education on entrepreneurial intention mediated by motivation and attitude among management students, State University of Malang, Indonesia. *International Education Studies, 10*(9), 61–69. <https://doi.org/10.5539/ies.v10n9p61>.
- Ndou, V., Secundo, G., Schiuma, G., & Passiante, G. (2018). Insights for shaping entrepreneurship education: Evidence from the european entrepreneurship centers. *Sustainability, 10*(11), 1–19. <https://doi.org/10.3390/su10114323>.
- Neck, H. M., & Greene, P. G. (2011). Entrepreneurship education: Known worlds and new frontiers. *Journal of Small Business Management, 49*(1), 55–70. <https://doi.org/10.1111/j.1540-627X.2010.00314.x>.
- Neck, H. M., Neck, C. P., & Murray, E. L. (2018). *Entrepreneurship: The practice and mindset*. Thousand Oaks, CA: SAGE Publication.
- Othman, N. H., Othman, N., & Juhdi, N. H. (2020). Entrepreneurship education and business opportunity exploitation: Positive emotion as mediator. *Cakrawala Pendidikan, 39*(2), 370–381. <https://doi.org/10.21831/cp.v39i2.30102>.
- Peterman, N. E., & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship.

- Entrepreneurship Theory and Practice*, 28(2), 129–144. <https://doi.org/10.1046/j.1540-6520.2003.00035.x>.
- Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. *International Small Business Journal*, 25(5), 479–510. <https://doi.org/10.1177/0266242607080656>.
- Pivec, M., & Dziabenko, O. (2004). Game-based learning framework for collaborative learning and student e-teamwork. *E-Mentor*, 2, 1–8. <http://www.e-mentor.edu.pl/xml/wydania/4/42.pdf>.
- Pivec, M., Dziabenko, O., & Schinnerl, I. (2003). Aspects of game-based learning. In Proceedings of the 3rd International Conference on Knowledge Management. Graz, Austria: Springer Verlag Heidelberg, pp. 216–225.
- Savery, J. R. (2019). Comparative pedagogical models of problem-based learning. In M. Moallem, W. Hung, & N. Dabbagh (Eds.). *The Wiley handbook of problem-based learning* (1st ed). Hoboken, NJ: John Wiley & Sons, pp. 81–104. <https://doi.org/10.1002/9781119173243.ch4>.
- Sedano, C. I. (2012). Workshop: Designing games for specific contexts. *Procedia Computer Science*, 15, 328–339. <https://doi.org/10.1016/j.procs.2012.10.097>.
- Sidhu, I., Johnsson, C., Singer, K., & Suoranta, M. (2015). A game-based method for teaching entrepreneurship. *Applied Innovation Review*, 1(1), 51–65. <http://scet.berkeley.edu/applied-innovation-review/>.
- Sidhu, I., Singer, K., Johnsson, C., & Suoranta, M. (2015, 14 June). *Introducing the Berkeley Method of Entrepreneurship – A game-based teaching approach paper*. Paper presented at 2015 ASEE Annual Conference & Exposition, Seattle, Washington. <https://doi.org/10.18260/p.24367>.
- Solomon, G. (2007). An examination of entrepreneurship education in the United States. *Journal of Small Business and Enterprise Development*, 14(2), 168–182. <https://doi.org/10.1108/14626000710746637>.
- Souitaris, V., Zerbini, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566–591. <https://doi.org/10.1016/j.jbusvent.2006.05.002>.
- Tasnim, R. (2012). Playing entrepreneurship: Can games make a difference? *Entrepreneurial Practice Review*, 2(4), 4–18. https://www.academia.edu/4643094/Playing_Enterpreneurship_Can_Games_Make_a_Difference.
- Vaidya, S. (2009). The problem-based learning model for teaching entrepreneurship. In O.-S. Tan (Ed.). *Problem-based learning and creativity*. Shenton Way, Singapore: Cengage Learning Asia Pte Ltd, p. 256.
- Wilson, K. (2008). Entrepreneurship education in Europe. In J. Potter (Ed.). *Entrepreneurship and higher education*. Paris: OECD, pp. 119–138.