



# Hearing-Impaired Student Achievement Using ‘Treasure of Famous Food (ToFF)’ Game Board as Teaching Aid at Polytechnic Malaysia: A Case Study in Politeknik Tuanku Syed Sirajuddin, Perlis

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**Abstract:** Most students do not focus on their learning session in the classroom. The objective of this study is to identify the level of student satisfaction and their academic achievement in learning institutions. Treasure of Famous Food (ToFF) is one of the mediums that can be used as a tool to help trainers teach students in the classroom more interestingly. ToFF is a combination of game card and game board that introduces local food throughout Malaysia. This game is devoted to special Skills students (KHK) in Malaysian Polytechnics who are keen to learn to recognize food diversity in Malaysia. The respondents are 30 students of hearing impaired in 3 semester who's taking the Certificated in Hotel and Catering (KHK) at Polytechnic Tuanku Syed Sirajuddin. The study was conducted using quantitative methods and the study was evaluated using the questionnaire technique. From the total of respondents, the percentage of female student was 73.3% meanwhile 26.7% were male student. Based on results, it shows that this game board can improve student performance in communicate, gain knowledge and also attract student to learn their courses in a fun way. From the result, it also has been proven that this game board has achieve the objective to develop a product ToFF innovation based on game board. From the research and questionnaire made, this shows ToFF get a good respond from target student. The conclusion shows that this product able to be innovated to help student with hearing impaired and normal student to variable method of learning during Teaching and Learning process. Product that has been innovated get a positive response from the target market and another consumer. Therefore, some suggestions for improvements are proposed in this paper to improve the level of student satisfaction and academic achievement in polytechnic.

**Keywords:** Hearing impaired, famous food, achievement in classroom

## 1. Introduction

In this era of globalization, Malaysia will become a developed nation by the year 2020 and to achieve that goal, Malaysians need to be the creators of the community rather than the consumers. "The Ministry of Education gives freedom to all teachers to create their own way to attract students as long as they are in line with the school's co-curriculum" (Utusan Malaysia Online, 2016). The country's education system has changed and experienced many reforms in the 21st century. The main goal of this change is to make Malaysia a center of academic excellence in the Asian region as well as internationally in the 21st century. The widespread development and advancement of technology has affected reforms in the country's education system. Technology-based learning also increasingly being implement in the teaching and learning process in higher education institutions. This is in line with the contents of the Education Development Master Plan (PIPP), 2010 in which the Ministry of National Education emphasizes the development of a creative and innovative educational system to meet the needs of the country in the 21st century.

As mentioned by Han et al. (2012), students are also always lazy to participate in sharing their thoughts during a learning discussion. This is due to the weakness in terms of planning, construction and use of Teaching Aids (ABBM) which is not interesting. Especially during the teaching and learning process the lecturers do not use teaching aids that can attract students to engage in activities carried out in lecture teaching at tertiary institutions (Khalil & Elkhider, 2016).

Therefore, innovation is needed not only in the field of technology, but in all fields including education, especially knowledge and application in teaching to implement innovative learning formats (Ujang, 2022). According to the interpretation of Molchanov, innovation is the result of scientific work aimed at improving activities and intended for the implementation of social production. Nowadays, game known as a form of competitive activity or sport played according to rules. Meanwhile the definition of board given by Google is known as a long, thin, flat piece of wood or other hard material, used for various purposes, in particular. The oldest board game was created in 3500 before century (BC) derived from Egypt. There are many early board games that are existed such as from, Iran called Jiroft civilization game board. Game board is a table top game that involves counters or pieces moved or placed on a pre-marked surface or 'board'. Nowadays game is method to attract students in learning process. Supported by Taspinar et al. (2016); Chin & Zakaria (2015); Virvou et al. (2005), said "among the positives outcomes that determined by researchers are the potential of the learning games method to motivate students" and "to build up an exciting learning environment and also entertaining" (Taspinar et al. 2016; Purnamasari & Advensia, 2014; Rastegarpour & Marashi, 2012). Treasure of Famous Food (ToFF). The concept and idea of this game is based on a game card from a childhood game, Happy Family and Old Maid. Happy Family is a traditional British game card e usually with a specialty made set of picture cards, featuring illustrations of fictional families of four, most often based on occupation types. The object of the game is to collect complete families, and the game is similar to Go Fish (Simon et al., 2019).

As the conclusion gaming learning technique needed to be apply in today learning process to make students feel entertain while studying in class. Studies also shows that students more likely to gain knowledge and memorised information easier in classes if the information were given in diagram or games method. Students will easily get bored and loss focus during lecturers which only depends on writing. By using game board method, children at the age of 4 years old also capable to play and learn something by participating themselves in playing games during their early learning process. Next, by applying gaming learning method we can uncover hidden talent in student inner self such as help to expand their creativity. According to Liona et al. (2016), the use of media as a tool not only can attract students to follow the process of teaching and learning better but also to help improve student understanding and facilitate educators to communicate knowledge. Teaching by using gaming board manage to create two-way communication between lecturers and students. In another word, game board helps to produce active response from students instead of passive response only.

## 1.1 Objectives

The objectives of the study consist of:

- a. To identify the level of student achievement in classroom using game board.
- b. To examine the level of student satisfaction on use game board as their learning aid.

## 2. Literature Review

A board game is a tabletop game that involves counters or *pieces* moved or placed on a pre-marked surface or "board", according to a set of rules. Some games are based on pure strategy, but many contain an element of chance; and some are purely chance, with no element of skill. Learning to use media in the form of games will be more fun and meaningful for students. According to Piaget (Beetlestone, 2013) it is argued that learning should be meaningful and oriented to the needs and development of children. Also mentioned by Mira (2022) the type of games that kids love most are board games. This type of board game allows for media to increase student motivation including snake board games, Iqico board games, and monopoly board. Board games are an important tool to provide hands-on and heads-on skill and knowledge development for people of all ages on all subjects. Not only do well-designed games create an engaging atmosphere, they also provide a nonthreatening, playful, yet competitive environment in which to focus on content and reinforce and apply learning (Treher, 2011). Mistakes are useful and point out what we need to learn. The board itself provides a visual metaphor to help connect information. Game elements, discussions, and problem solving with fellow team members about the content are vehicles for learning. Subtle redundancy to reinforce learning and insure retention should be incorporated into the game design. Good questions, problems to solve, and situations to consider allow players to think through and apply what they learn. It is deliberate intervention that involves the planning and implementation of instructional activities and teaching experience to meet intended learner outcomes according to teaching plan it can be defined as the relatively permanent change in an individual behaviour (knowledge skill and learning attitude). The use of the card game to promote game-based learning also enhanced learning motivation and learning effectiveness (Yien, 2011). Game board can the diversity among students where they can practice teamwork regardless the race, age or even the gender. Other than that, game board can be encouraging student to be more progressive and build two-way communications. According to the national curriculum games can be a good teaching method and games, such as role-playing games, imitation games, theatrical expression and problem-solving activities are especially fitting for all stages of language learning (Johnson, 2017). Therefore, using game board as a teaching tool, student can experience mixture of feelings compared to the plain boring teaching sessions in classroom. Those emotions can create a positive feedback among students.

According to Baba et al. (2018), the history, system and philosophy of Education in Malaysia have highlighted the main problems of education in special education for the visually impaired, hearing and speech impaired who emphasize language and communication problems. Communication problems faced by students with hearing loss are more complicated because they are unable to hear what the teachers want in communicating information and relying heavily on sign language. For people with hearing loss, sign language is one of the most effective means of communication used by the hearing-impaired community. Signal languages can be used by communities with speech problems, communities that cannot learn language through speech, and communities that cannot hear (Wilbur, 2013). As argued by Baba et al. (2018), photography is one of the most important elements of communication that has been used in many fields. Many prefer to use words that say 'a picture is worth a thousand words' or, rather, simply mean that, photography has been able to represent many words simply by looking at a single picture. This enhances the level of confidence of hearing-impaired students in communication without feeling isolated as they can speak through the photographic images used in everyday life and can improve the quality of learning and teaching for students with hearing loss.

Nowadays by using game board as teaching method in the classroom, it will improve student understanding on their subjects. There are several ways that are university can do such as combining education and technology that generates talent resources (Ma et al., 2015). Despite that, Game board can be participating by various level of knowledge from some classes. This will create more competitive environment among players. According to Piaget, children learn many of society is rules and regulation. Result of the game board, can be obtained and study from the student's achievement and satisfaction. The entire players have their own character on the game board and own role in order to achieve the team goal to find a winner. One of these ways is the personal way, where the goal is to see it possible to approach a specific topic by using, for example role play or other interaction (Gardner, 2006).

### 3. Methodology

This study utilized a quantitative approach with a survey method in order to collect data. The respondents of this study consists of KHK students taking the Certificated in Hotel and Catering at Polytechnic Tuanku Syed Sirajuddin. There are three (3) semesters for their KHK program and their students have 29 students. (Source: Reten Januari 2016, Jabatan Pengajian Politeknik (2016), Department of Polytechnic Studies (2016). Sampling is the extraction of a fraction of a population or whole constituent to represent that population or constituent (Kerlinger, 1973). Researchers use random sampling or Sample Random Sampling to obtain sample studies from a population. Based on Krejcie & Morgan's (1970) sample size tables, a sample size of 29 is needed for a population of 30 as shown in the table below. The instrument used in the oral transform leadership questionnaire was adapted from Bass & Avolio (2004) Multifactor Leadership Questionnaire (MLQ). The Commitment Questionnaire used 24 items developed by Meyer and Allen (1990).

**Table 1. Population and Sample of Three (3) Semesters in Polytechnic Tuanku Syed Sirajuddin**

Semester	Population	Sample
KHK 1	12	10
KHK 2	7	10
KHK 3	11	10
Total	30	30

A set of questionnaires were used with 5 –points Likert scale to measure all variables. A five-point Likert scale was employed ranging from '1-Strongly disagree' to '5-Strongly agree' to measure all variables and SPSS was utilized to analyze the data. Instrument for this study was adapted from various authors for item satisfaction and student achievement in classroom. As refer to Pallant & Tennant (2007), reliability of the instruments was acceptable because the analysis of Cronbach Alpha has shown good values.

### 4. Finding and Analysis

29 questionnaires were distributed. From 30 respondents, students were female 22 (73.3%) and 8 were male student (26.7%).

**Table 2. Respondent's Profile by Gender (N= 30)**

Gender	Frequency	Percent (%)
Male	8	26.7
Female	22	73.3
Total	30	100.0

**Table 3. Student Satisfaction on Using Game Board**

Item	Mean	Std. Deviation	Description
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This product is exactly what I need.	4.1429	.69501	High
I am satisfied with my decision to use this product.	4.2429	.63327	High
I have truly enjoyed this product.	4.3143	.68997	High
I am pretty satisfied with the product I have chosen.	4.3429	.59701	High
I enjoy using technology	4.4214	.64672	High
Students should know how to use technology in class.	4.4357	.56531	High
I enjoy learning by playing game board	4.4214	.63550	High
I prefer to learn by doing something in class.	4.3286	.62838	High
If I could do it over again, I would play different questions.	4.3071	.58637	High
Playing this product has been a good experience.	4.3571	.62411	High

The mean score for the first item “This product is exactly what I need” mean score is 4.1429 which is categorised as high meanwhile the next item mean score is 4.2429 also in the high level. All item above are described as high. The third item “I have truly enjoyed this product” mean score is 4.3143 and the fourth item mean score is 4.3429. The fifth item “I enjoy using technology.” the mean score is 4.4214 and the sixth item is 4.4357. The seventh item “I enjoy learning by playing game board” mean score is 4.4214 and the third last item “I prefer to learn by doing something in class.” resulted a mean score total 4.3286. The second last and last item mean scores are each 4.3071 and 4.3571.

**Table 4. Student achievement in classroom**

Item	Mean	Std. Deviation	Description
I make myself prepare for Eastern and Western subject module	4.0714	.70602	High
I want to get good grades on tests, quizzes and assignments	4.4857	.61732	High
I study the lesson I missed if I was absent from the class.	4.3000	.61982	High
I study harder to improve my performance when I get low grades.	4.4214	.56349	High
I learn more if I study in group	4.3929	.64257	High
When I do things in class, I learn better.	4.2643	.64161	High
I remember things I have heard in class better than I read.	4.1786	.69186	High
When I read the instructions, I remember them better	4.2357	.67441	High
When I play something, what I have learned better	4.2857	.66013	High
I learn best in class when I can participate in related activities.	4.2786	.64672	High

The mean score for the first item “I make myself prepare for Eastern and Western subjects module” is 4.0714 which is categorised as high meanwhile the next item mean score is 4.4857 also in the high level. All the item above is described as high. The third item “I study the lesson I missed if I was absent from the class” mean score is 4.3000 and the fourth item mean score is 4.4214 while the next item mean score is 4.3929. The fifth item “I learn more if I study in group” the mean score is 4.3929 and the sixth item is 4.2643. The seventh item “I remember things I have heard in class better than I read” mean score is 4.1786 and the third last item “When I read the instructions, I remember them better” resulted a mean score total 4.2357. The second last and last item mean scores are each 4.2857 and 4.2786.

## 5. Results and Discussion

From the data analysis, result on objective to identify the level of student achievement in classroom. Through, Rondon et al. (2013) find out that gaming learning method can fasten the learning process and create a positive interaction environment among students, it is proven that game board can improve students’ achievement in classroom as it will make the learning process become more exciting.

Game boards can help students to learn more effectively because students are able to enjoy themselves during playing board games during learning process (Nakao, 2019). Moreover, this game board can be participated and being involved by many players at once while studying with classmates. In addition, the game board can create a new atmosphere in the classroom to be more cheerful and entertaining. Next, students can study in groups with classmates. Students will be not easily bored by just listening to lecturers only, but with game board lecturers can create two-way communication between students and lecturers. Thereby encouraging students to cultivate a healthy competitive spirit in the classroom, through group discussions. In addition, in this way polytechnics can improve students who are knowledgeable and think outside the box. In addition, lecturers play an important role in the development of potential students in the classroom and can sharpen the minds of students so that not only depend on the notes alone. With this game board it can be a platform for students to brainstorm and exchange ideas without limitation. Finally, this board game can attract students to review their lessons either directly or indirectly.

## 6. Conclusion

This innovative teaching aid product has a positive impact on students to increase the level of student’s achievement in the classroom. This game board then encourages hearing impaired students to review and study in the classroom by

indirectly making study group. In fact, it can also be learned in various subjects regardless of the age and subjects. Game board also can improve the level of student knowledge and level-up student soft skill in classroom and also improve self-confident. The game board also can improve their learning teaching process providing quality education of special program courses to the disability person to market themselves in accordance with the current needs of the industry. Finally, these innovative products can also open space and improve product quality while promoting the production of innovative products in the industry. Polytechnics should provide internet facilities in every class to facilitate learning and teaching processes running smoothly while using game board.

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## Conflict of Interest

The authors declare no conflicts of interest.

## References

- Allen, N. J., & Meyer, J. P. (1990). Organizational socialization tactics: A longitudinal analysis of links to newcomers' commitment and role orientation. *Academy of management journal*, 33(4), 847-858.
- Baba, B., Sidek, S., Johdi, M., Zayed, T. M., & Harris, R. (2018). Historical development of Islamic integrated education in Malaysia since 15th century: Current needs for the globalized world. *Historical development of Islamic integrated education in Malaysia since 15th Century: current needs for the globalized world*, 9-30.
- Bass, B. M., & Avolio, B. J. (Eds.). (1994). *Improving organizational effectiveness through transformational leadership*. sage.
- Beetlestone, F. (2013). *Creative Learning: Learning Strategies to Preserve Student Creativity*. Bandung: Nusa Media.
- Chin, L. C., & Zakaria, E. (2015). Understanding of number concepts and number operations through games in early mathematics education. *Creative Education*, 6(12), 1306.
- Gardner, H. (2006). *The development and education of the mind: The selected works of Howard Gardner*. Routledge.
- Han, J., Niu, J., Chin, A., Wang, W., Tong, C., & Wang, X. (2012, September). How online social network affects offline events: A case study on douban. In *2012 9th International Conference on Ubiquitous Intelligence and Computing and 9th International Conference on Autonomic and Trusted Computing* (pp. 752-757). IEEE.
- Johnson, K. (2017). *An introduction to foreign language learning and teaching*. Routledge.
- Kerlinger, F. N. (1973). *Foundations of behavioral research: Educational, psychological and sociological inquiry*. Holt Rinehart and Winston.
- Khalil, M. K., & Elkhider, I. A. (2016). Applying learning theories and instructional design models for effective instruction. *Advances in physiology education*.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Liona, A., Darvina, Y., & Razi, P. (2016). Pengaruh Penerapan Pembelajaran Web Based Learning Social Media Design terhadap Kompetensi Fisika Siswa Kelas X SMA Negeri 1 Kubung Solok. *Pillar Of Physics Education*, 7(1).
- Ma, W. W., Yuen, A. H., Park, J., Lau, W. W., & Deng, L. (2015). *New media, knowledge practices and multiliteracies*. Springer, Singapore. <https://doi.org/10.1007/978-981-287-209-8>.
- Mira, N. S. (2022). *Developing Panjat Pinang Board Games In Teaching Reading Narrative Text* (Doctoral dissertation, UIN RADEN INTAN LAMPUNG).
- Nakao, M. (2019). Special series on “effects of board games on health education and promotion” board games as a promising tool for health promotion: a review of recent literature. *BioPsychoSocial medicine*, 13, 1-7.
- Pallant, J. F., & Tennant, A. (2007). An introduction to the Rasch measurement model: an example using the Hospital Anxiety and Depression Scale (HADS). *British Journal of Clinical Psychology*, 46(1), 1-18.
- Purnamasari, V., & Advensia, A. (2014). Factor influencing of usage accounting game: Study of learning by game and theory acceptance model. *International Journal of Business, Economics and Law*, 5(1), 18-27.
- Rastegarpour, H., & Marashi, P. (2012). The effect of card games and computer games on learning of chemistry concepts. *Procedia-Social and Behavioral Sciences*, 31, 597-601.

- Rondon, S., Sassi, F. C., & Furquim de Andrade, C. R. (2013). Computer game-based and traditional learning method: a comparison regarding students' knowledge retention. *BMC medical education*, 13(1), 1-8.
- Simon, R. N., Cherry, S. G., & Fortin, D. (2019). Complex tactics in a dynamic large herbivore–carnivore spatiotemporal game. *Oikos*, 128(9), 1318-1328.
- Taspinar, B., Schmidt, W., & Schuhbauer, H. (2016). Gamification in education: A board game approach to knowledge acquisition. *Procedia Computer Science*, 99, 101-116.
- Treher, E. N. (2011). *Learning with Board Games*. Atlanta: Learning key.
- Ujang, S. (2022). Correlational study of vocabulary mastery and cognitive learning style in vocational school. *Journal of English Language Teaching Innovations and Materials (JELTIM)*, 4(1), 102-126.
- Virvou, M., Katsionis, G., & Manos, K. (2005). Combining software games with education: Evaluation of its educational effectiveness. *Journal of Educational Technology & Society*, 8(2), 54-65.
- Wilbur, R. B. (2013). Phonological and prosodic layering of nonmanuals in American Sign Language. In *The signs of language revisited* (pp. 196-220). Psychology Press.
- Yien, J. M. (2011). A game-based learning approach to improving students' learning achievements in a nutrition course. *The Turkish online journal of educational technology*, 10(2), 1-10.