

## Review Effects of Lessons using Talk Card Game

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**Abstract:** The talk card game is a game which helps the students to discuss and review the learning contents with peers using the gamification mechanics and rules. The purpose of this study is to validate the review effects of the talk card game: the subjects of this study are 35 engineering students who used the talk card game to review and discuss the learning contents with peers. Five questionnaires with a 5 point Likert scale were used to collect data. Data were analyzed using SPSS Software. The discussion process using the talk card game was funny. The talk card game did not undermine the depth of the debate among the students. The talk card game increased the equality of speech among the students. The talk card game make the students listen to the opinions of other students carefully. The students who used the talk card game recommended this game to other classes. The talk card game is an effective tool which amuses the students and improves the learning outcomes in the reviewing process of classes.

**Key words:** Talk card game, gamification, learning effects, serious game, engineering education, process

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### INTRODUCTION

Gamification means the application of game elements and fun factors to non-game (Grove, 2011). Papastergiou demonstrates that the gamified class is more compelling in enhancing understudie's learning and more motivational than the non-gaming approaches (Papastergiou, 2009). By fulfilling the student's needs on fun and joy, the gamified class would motivate the students to be absorbed in class.

Lee and Hatesohl brought up that in the wake of listening to a 10 min oral presentation, the audience members on average have listened, comprehended and held around 50% of data. Besides in 48 h in the wake of listening, the average decreases to 25% (Lee and Hatesohl, 1993). This study suggests talk card game which was designed using the gamification theories. The talk card games is developed to help the students to discuss and review the learning contents with peers. This study used the gamification theories to encourage the students to listen to other students in the debate process. The aim of this study is to validate the effects of the talk card game.

### MATERIALS AND METHODS

The overall process of the talk card game unfolds in five steps. Firstly, the lecturer introduced the talk card game. Secondly, each team was organizaed with five members. Thirdly, the feedback sheet and discussion

cards were distributed to each team (Fig. 1 and 2). Fourthly, each team played the talk card game. Finally, a survey targeting 35 students was conducted. The survey results were statistically analyzed using SPSS Software.

**Rules for playing the talk card game:** Bunchball depicted significant components that could be utilized as a part of gamification, for example, points, badges, levels, challenges, trophies, accomplishments, virtual money, virtual goods and leaderboards (BC, 2010). In this study, the color stickers were used as points. Each student could see colleague's feedback sheets and this situation worked as a micro leaderboard within the discussion group.

Acker classified 12 key elements of listening: preparing to listen, stop talking; resisting distractions; recognizing your own biases finding an area of interest; keeping an open mind; showing some empathy; acknowledging the speaker; listening critically and delaying judgment; holding your fire being patient; exercising your mind but not letting it wander; judging the content, not the delivery; capitalizing on thought speed (Acker, 1994). The talk card game proposed in this study focuses on four elements: preparing to listen, stop talking; finding an area of interest; showing some empathy; acknowledging the speaker.

There are 3 rule sets for the talk card game including same rule for the talkers and listeners, rules for the talker who talks about the discussion card and rules for the listeners who listen to colleague's talk.

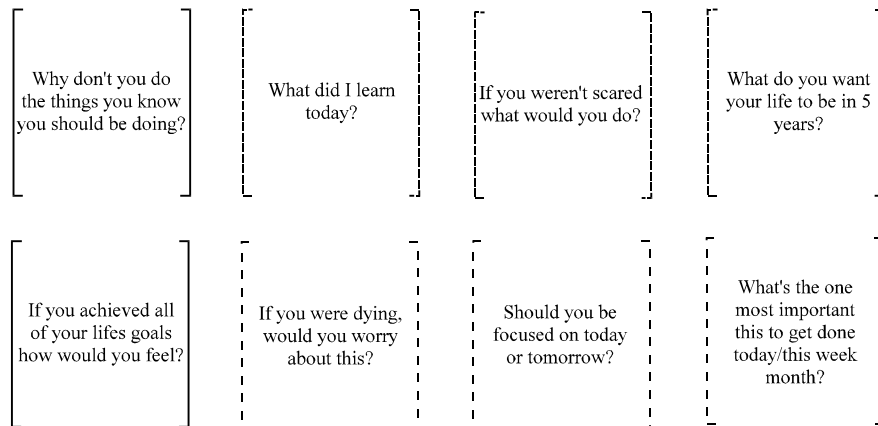


Fig. 1: Design of the discussion cards 35 Questions (35 question that will change your life forbes)

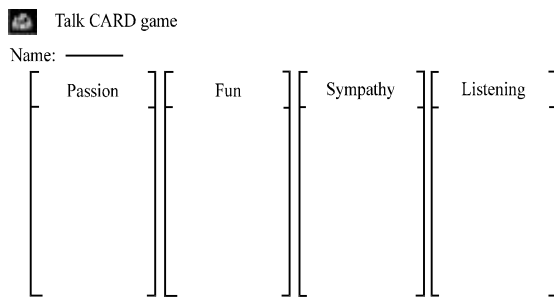


Fig. 2: Design of the feedback sheet



Fig. 3: Personal setting for talk card game

**Rule 1 (same rule for the talkers and listeners):**

- Each member should set the feedback sheet and four discussion cards as shown in Fig. 3 and 4
- Don't attach your own stickers to your feedback sheet. Your own stickers can only be attached to other colleague's feedback sheet

**Rule 2 (rules for the talker who talks about the discussion card):**

- If you have a passionate companion, detach your red sticker and attach it to your colleague's feedback sheet
- You can attach only one sticker to your colleague's feedback sheet at a time
- For example, if two colleagues listened carefully to your talk put a red sticker on each of them

**Rule 3 (rules for the listeners who listen to colleague's talk):**

- If you like your colleague's talk, detach your sticker (green, blue or yellow) from your sticker sheet and attach it on your colleague's feedback sheet
- You can attach only one sticker to each column of the colleague's feedback sheet. No matter how interesting your colleague's talk, you should not attach two green stickers at a time



Fig. 4: Team setting for talk card game

- For example, if a colleague talked a funny and sympathetic story with the discussion card then you can attach a green and yellow sticker to your colleague's feedback sheet

**RESULTS AND DISCUSSION**

The survey that explored the effects of the talk card game consisted of seven questions: two questions on the respondent's characteristics, one question on fun experiences, three questions on the learning effects of the talk card game and one question on the student's overall satisfaction.

The respondents of this survey were undergraduate students of an Engineering School at K University. There were 35 students in total: 27 males and 8 females. The 35 students acted as survey respondents. The survey questions with the exception of Q1 and Q2 were answered using a 5-point Likert scale (1 = ‘strongly disagree’; 2 = ‘disagree’; 3 = ‘neither agree nor disagree’; 4 = ‘agree’ and 5 = ‘strongly agree’).

Questions on the respondent’s characteristics inquired about the grade (Q1) and gender (Q2) of the respondents. A question on fun experiences (Q3), questions on the learning effects of the talk card game (Q4, Q5 and Q6) and a question on the student’s overall satisfaction (Q7) were as follows:

- Q 3: Was the discussion process using the talk card game funny?
- Q 4: Was the discussion process using the talk card game deep enough?
- Q 5: Was the voice given equally when you were playing the talk card game?
- Q 6: Did the discussion process using the talk card game encourage you listen to the opinions of other students?
- Q 7: Do you recommend the discussion process using the talk card game to be used in other classes?

The statistical distribution of the survey response on Q3 is shown in Fig. 5. About 94.3% of the students who played the talk card game responded that they enjoyed playing this game. Korhonen provided a framework of Playful user Experiences (PLEX) Model. The PLEX Model suggests 20 fun and pleasure factors: captivation, challenge, competition, completion, control, discovery, eroticism, exploration, expression, fantasy, fellowship, nurture, relaxation, sadism, sensation, simulation, subversion (Korhonen *et al.*, 2009) suffering, sympathy and thrill (Korhonen *et al.*, 2009). The students who played the talk card game might experience the fun factors of competition, expression, fellowship and sympathy. The statistical distributions of the survey response on Q3, Q4

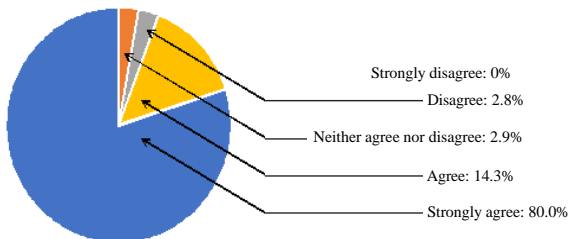


Fig. 5: Fun of the talk card game: was the discussion process using the talk card game funny?

and Q5 are shown in Fig. 6. About 91.4% of the students who played the talk card game responded that the voice was given equally when they played this game. The 77.2% of the students who played the talk card game responded that the discussion process using this game was deep enough. The 91.4% of the students who played the talk card game responded that the talk card game encourage them listen carefully to peer’s opinions. Considering these responses, it could be believed that the talk card game worked as an effective tool which provides a deep, equal and interactive discussion among peer’s. The statistical distribution of the survey response on Q7 is shown in Fig. 7. About 91.4% of the students who played the talk card game responded that they would recommend this game to other classes. The recommendation ratio is proportional to student’s overall satisfaction. One set of the discussion cards has 20 open-ended questions. If a lecturer of other class want to use the talk card game on another subject, she/he can create 20 open-ended questions on the subject. The other rules are same.

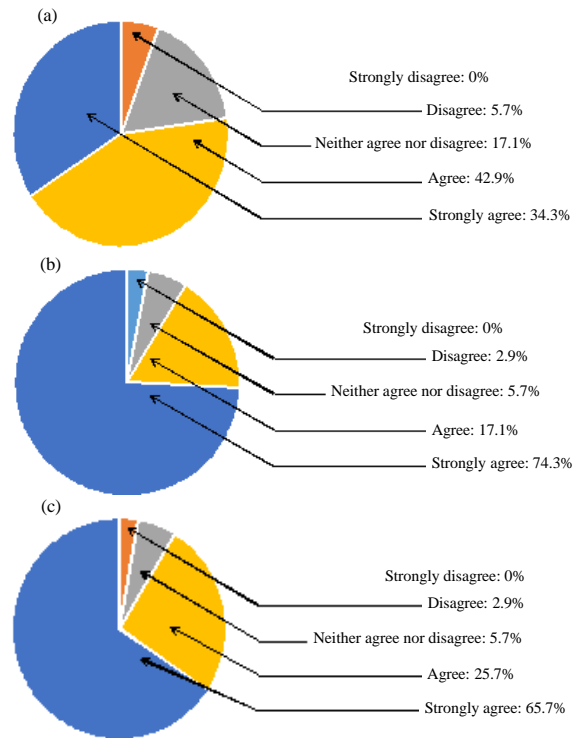


Fig. 6: Depth of the discussion, equality of the voice and effects of listening carefully: was the discussion process using the talk card game deep enough? Was the voice given equally when you were playing the talk card game? Did the discussion process using the talk card game encourage you listen to the opinions of other students?

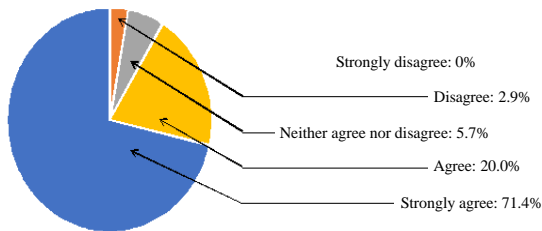


Fig. 7: Recommendation of the talk card game to other classes; do you recommend the discussion process using the talk card game to be used in other classes?

### CONCLUSION

This study has proposed the talk card game that aims to help the students to discuss and review the learning contents thoroughly and funny with peers. The gamification theory focusing on point and leaderboard systems was used in the design of the talk card game.

### IMPLICATIONS

The implications of this study can be summarized as follows: the proposed talk card game was proved to be an effective tool to motivate students to carefully discuss and review the learning contents. The talk card game is able to make students have fun by providing a feedback rule with a point system using the color stickers.

### LIMITATIONS

Limitations and further research issues of the present study can be summarized as follows:

- This study did not explore the side effects of the talk card game
- This study did not explore exactly what kinds of fun factors the students have experienced

- Further research should also consider the effects of additional game mechanics for the talk card game such as badges, level or unlocking

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