**Title of the article**: **Professional ethics training for nursing students using games for ethics education**

### Running title : Ethics training using games

1. Maryam Maddineshat

Ph.D. Student in Nursing. Department of Nursing, Nursing and Midwifery Faculty, Hamadan University of Medical Sciences, Hamadan, Iran

1. Mohammad Reza Yousefzadeh

Associate professor ,Bu Ali Sina University ,Collage of Humanities, Department of education , Hamadan, Iran

### [Mahdi](https://www.linkedin.com/in/alireza-gharib-18b9646a) Mohseni

MSc in Nursing. Department of Nursing, Nursing and Midwifery Faculty, Hamadan University of Medical Sciences, Hamadan, Iran

1. Zahra Maghsoudi

Ph.D. Student in Nursing. Department of Nursing, Nursing and Midwifery Faculty, Hamedan University of Medical Sciences, Hamadan, Iran

1. Mohammad Ebrahim Ghaffari

PhD Candidate, Biostatistics, Dental Sciences, Research Center, Faculty of Dentistry, Guilan University of Medical Sciences, Rasht, Iran

### Corresponding Author: Maryam Maddineshat

Ph.D. Student in Nursing. Department of Nursing, Nursing and Midwifery Faculty, Hamadan University of Medical Sciences, Hamadan, Iran

**Fax:** +98-08132229937

**Tel:** +98-08132229937

E-mail address: Neshat\_maryam@yahoo.com, m.madineshat@umsha.ac.ir

Total number of pages: 20

Total number of photographs:1

Word counts

for abstract:294

for the text:3003

Source(s) of support: This research received nospecific grant from any funding agency

**Abstract**

**Introduction*:*** It is important to consider putting ethical education to actual use and not simply focus on informing or training students. Ethics is a dynamic field; it is not a subject that one learns once and then forgets. Ethics is learned through case studies that clarify values and their application.The purpose of this study was to develop a method of teaching professional nursing ethics to students using games at Malayer Nursing Faculty in western Iran.

**Method:**A one-group pre-post and post-test design was used. Thirty undergraduate nursing students at the Malayer Nursing Faculty in western Iran participated in this study as part of a nursing ethics program. Professional ethics education was provided from January 2016 to May 2017 to students for 17 weeks in 90-minute sessions. The Lutzen ethical sensitivity questionnaire and a checklist of the satisfaction levels of games were used to measure the effect of training. Repeated measures ANOVA and the Greenhouse-Geisser correction were used to measure ethics game

**Results*:*** After training, the total moral sensitivity questionnaire scores increased significantly (p = 0/02). The score on awareness of the relationship with the patient and the application of ethical concepts in ethical decisions from the sub-domain of moral sensitivity increased significantly. Card sorting and drawing or art production earned the highest scores for satisfaction from students.

**Conclusion**: Teaching professional ethics using games is a useful way to teach ethical issues. In a game, students are given information and immediately apply their knowledge to the related situations. It is recommended that this training method be continued for effective feedback.

**Keywords**: Education, Student, Nursing, Ethics, Baccalaureate

**Introduction**

The rapid advances in science and technology have many personal and social consequences. Nurses must shape their goals and purposes in line with technology and science and, because of the nature of their profession, they face moral dilemmas every day(1). Nurses who must care for a specific population, must develop the skills of critical thinking, decision-making, conflict resolution and the ability to support that population. They require ethical education for all levels of their professional life (2). Many books, theories and articles describe how nurses are confronted with ethical challenges(3). It must be determined whether or not Iranian nursing students are ready to face the ethical challenges of their careers. The short answer to this is "no" (4). Studies emphasize that nursing is ethics based and ethics are fundamental to nursing care. The use of interactive education can help to teach this concept. One way to increase the ethical sensitivity of students in identifying ethical violations is the use of appropriate models and content for nursing ethics education courses (5, 6). Jafari et al.(7) described several strategies for nursing for the development of ethical education. These are use of an ethics curriculum with a consolidated approach, ethical training at all levels of education, an ethics internship and professional ethics education at the patient's bedside. Considering the large volume of material to be covered in current methods of nursing ethics education, the use of modern methods for professional ethics education, the use of mentors and student feedback are the most important factors in the development of nursing professional ethics. Ozgonul et al. (8) in Turkey suggested that medical ethics education should be learner-centered and problem-based. They recommend that its aims should be to assist students in deep information processing in order to link new information with existing ideas and experiences. The use of games is an innovative method that researchers suggest can improve student learning outcomes. The use of games can improve learning, encourage critical thinking and make learning more exciting. In fact, a game can draw on real-life scenarios; however, few studies support this approach (9). Games are not only fun, but also provide an effective educational strategy to enhance learning by provoking student interest and participation in learning. The combination of a game with lectures helps create an organized educational environment and promotes student knowledge. This approach is more effective than the lecture method alone (10). White and Davis (11) introduced a game entitled "Rights: Helter Skelter" for first year students that focuses on ethics and nursing. This game enables students to analyze moral difficulties and endure uncertainty in ethical issues. Some contradictions exist in the use of the game for student ethics, but the games are activities in which players compete on the basis of rules and to create new and innovative strategies for learning (12). Moreover, with developments in science and increasing ethical challenges facing healthcare centers, more and more modern methods such as games can be used to identify and deal with ethical challenges(13). Studies have shown that ethics education is focused on problems of a challenging nature, but there is no study of problem-solving of ethical challenges. The purpose of the current study was to determine the effect of professional nursing ethics training for students using games programmed with ethics to be studied.

**Method**

**Design and subjects**

This quasi-experimental study was carried out in the form of one group with a pre-test and post-test. The statistical population was the students of the Malayer nursing faculty in western Iran. After obtaining authorization from the Malayer Nursing Faculty, 30 nursing students in their fourth semester of nursing school were selected through non-probabilistic sampling to participate from January 2016 to May 2017. In Iran, nursing education lasts four years and students study nursing ethics in their second year of school. Students who met this criterion participated in the study. In the second year of study, nursing students receive clinical experience and must understand the principles of professional ethics.

**Measurements**

**Moral sensitivity**

The sampling tools included the Moral Sensitivity Questionnaire developed by Lutzen in Sweden in 1994 and amended in 1997 and 2003. In Iran, this questionnaire has been used by Abbaszadeh et al. (14) and its reliability and validity have been confirmed. The reliability of the questionnaire was reported by Karimi Naghandar et al. α= 0/7 (15). The questionnaire consists of two parts. The first part is demographic information and the second part has 25 questions that measure the degree of moral sensitivity. The questionnaire uses a 5-point Likert scale of total agreement (4) to totally opposed (zero). The highest score possible is 100 and the lowest possible score is zero. A total score of 0 to 50 denotes low moral sensitivity, 51 to 75 denotes moderate moral sensitivity and 76 to 100 denotes high moral sensitivity. The questionnaire has six dimensions for patient autonomy (questions 10, 12 and 13), awareness of how to communicate with the patient (questions 1, 2, 3, 4 and 17), professional knowledge (questions 16 and 24), experiencing problems and moral conflict (questions 9, 11 and 15), applying moral concepts to ethical decisions (questions 6, 8, 14, 20) and honesty and goodwill (questions 5, 7, 19, 21, 22, 23, and 25) (16)

**Measurement of satisfaction students of ethics games**

Because the teaching of professional ethics in the form of a game is new, in order to receive feedback from the students, a checklist was provided about the teaching methods of the authors. This consisted of 17 checklist questionnaires that assess satisfaction with the 10 games played over the course of 16 sessions. The questions are scored using a 5-part Likert scale of very dissatisfied (1), dissatisfied (2), neither satisfied nor dissatisfied (3), satisfied (4) and very satisfied (5). A checklist was also developed to measure student satisfaction with the content taught in each session using a Likert score. The validity of this checklist was confirmed by faculty members.

**Intervention**

It was initially explained to the students how nursing ethics would be taught so that they could participate in the teaching process. Next, 30 nursing students were divided into 7 groups (3 male and 4 female). The nursing ethics session were held once a week for 17 weeks in 90-minute sessions. The ethics training program selected for each session was in line with the new curriculum of nursing approved by the Ministry of Health and Medical Education of Iran in 2013 (Table 1). This program earns educational credits. The contents of each session were prepared by the teacher in PowerPoint and sent to the students by social media to study before class. A combination of problem-solving and game play was used to teach the contents of each session. The lessons were designed to focus on ethical scenarios and questions about health care by the use of games and competition between students when responding to scenarios. The guide adopted on how to organize games in accordance with the content of each session was published by the Chair of UNESCO (United Nations Educational, Scientific and Cultural Organization) on bioethics. To teach the ethical concepts, the games for each session were selected from Moral Games for Teaching Bioethics (16, 17). Twelve games from this book were selected in accordance with the educational content. Some lessons were held in two sessions due to the nature of the game, the teaching content, the writing assignment, the need for lectures and the opportunity for all students to present their assignment.

|  |  |  |
| --- | --- | --- |
| **Table 1: Contents of professional ethics for nursing students in the form of games** | | |
| Number of session | Main themes | Teaching method |
| 1 | Professional ethics in the health system  Definition of nursing ethics and its Importance | Familiarization with teaching. Divide students into small groups. Application of small group games. Buzz groups: Design moral questions from the text of this session. Give prize for top group. |
| 2 | Philosophy of ethics in medical sciences  History of nursing ethics and human relations | The Brainstorming Game: Development of moral questions from text of this session. Groups compete to answer questions. |
| 3 | Bioethics | Card sorting game: Design and present flashcards of bioethical principles and case studies by student groups. Give prize to top group. |
| 4 | Moral sensitivity in nursing education (clinical) | Health travel game: Encourage students to discuss in pairs about the gap in the treatment of patients seen during training sessions. |
| 5 | Types of physician-nurse-patient communication models | Lecture and explanation of types of physician-nurse communication models. Writing scenario about physician-nurse-patient relationship by groups with instructor supervision. |
| 6 | Types of physician-nurse-patient communication models | Role-playing game: Implement a physician-nurse-patient model in form of role-playing by small student groups. Give prize to top group. |
| 7 | Ethical aspects of decision-making | Talk-in-pairs game: Complete Canadian Clinical Nurse Ethical Decision-making Guidelines form by two supervised instructors. Give prize to top group. |
| 8 | Ethical aspects of decision-making | Lecture, analysis of student assignments from previous session and provide feedback. |
| 9 | Professional nursing responsibilities based on ethical standards | Lecture and explanation of professional responsibilities of nurses, scenario writing for hot seat game |
| 10 | Professional nursing responsibilities based on ethical standards | Hot seat game: Design 4 moral questions having answers from text. Each group member is paired with a member from the other group. Opposing team sits in the hot seat and answers questions. |
| 11 | Moral and legal issues in nursing | Drawing or production art game: Each group writes 7 nursing standards on a balloon and write ethical slogans and present them. Give prize to top group. |
| 12 | Moral and legal issues in nursing | Socratic debate game: Teach ethical concepts and rules using films. Contest, discuss and analyze films between groups. Prize to top group. |
| 13 | Special professional offenses and penalties | Pass the parcel game: Wrap two gifts, one for each group, in layers of paper. Students must unwrap one piece of paper and answer the question on it related to specific professional offenses. |
| 14 | Special professional offenses and penalties | Pass the parcel game. |
| 15 | Understanding human rights and respecting the rights of the patient | Case study game: Instructor writes case scenarios from text of session and small groups compete to respond to scenarios. |
| 16 | Professional nursing ethics codes | Field visits/educational visits game: Introduce Code of Ethics for Nursing in Iran. Divide students into small groups and visit the bedside, creating the opportunity to review the code of ethics at the bedside. |
| 17 | Discussion of past sessions | Conclusion |

**Data analysis**

Descriptive statistics were used to measure the mean and standard deviation. To compare the moral sensitivity scores before and after education, the paired t-test and chi-square test were used to correlate ethical sensitivity by gender. Repeated measures ANOVA and the Greenhouse-Geisser correction were used to measure satisfaction with the ethics game. The results were considered to be significant at p = 0.05. Data analysis was performed using SPSS16 software.

**Ethics of research**

A signed voluntary participation consent form was obtained from all students and the students were assured that their responses would not affect their grades and were completely confidential and anonymous. A coding system was used to keep the information confidential. If desired, the results of the study were communicated to the participants.

**Results**

**General characteristics of nursing student**

About 30 undergraduate nursing students participated in the study and consisted of 14 women (53/3%) women and 16 (46%) men. The average age of participants was 21 years (22/17 ± 5/28). Of them, 93.3% had not attended an ethics workshop.

**Effects of teaching nursing ethics by game on moral sensitivity**

The results of the test of moral sensitivity are shown in Table 2. The mean score of gender sensitivity was 66/43 ± 5/85 for female students and 62/94 ± 7/5 for male students. There was no significant difference between gender and student moral sensitivity scores using the chi-square test (p = 0/06). For the different dimensions of moral sensitivity, the highest scores were for knowing how to communicate with the patient, using ethical concepts in moral decision-making and charity. Comparison of the total score of emotional sensitivity before and after intervention based on the paired t-test showed a significant statistical relationship (p = 0/02). Before intervention, the majority of students obtained average moral sensitivity scores and after the 17 sessions, the ethic sensitivity score of students had increased to moderate or high levels (Table 3).

**Satisfaction of nursing students for ethics game**

At the end of the nursing ethics course, repeated measure ANOVA was used to measure student satisfaction with the games. The average level of student satisfaction score (total of 5) in each session was more than 4.4 (Table 3). The level of satisfaction is shown in Figure 1. As seen, card sorting and drawing or art production earned the highest scores from students and role playing, paired conversation, hot seat, health travel and debates ranked next in order. Because there was no sphericity between meanings, the Greenhouse-Geisser correction was used and showed no significant trend between the means of the sessions (p = 0/66; Table 4).

**Discussion**

The purpose of this study was to determine the effect of teaching professional ethics to nursing students using games as a teaching aid during the nursing ethics course. The total score for moral sensitivity before and after intervention showed statistically significant changes. The range of moral sensitivity scores of nursing students fell into the medium and high ranges (93/3% to 96/7%), which indicates the positive effects of the use of games during nursing ethics. Teaching professional ethics principles in terms of awareness of how to communicate with the patient and the use of ethical concepts in moral decisions had a positive effect. A review of the database shows that there is no study that specifically addresses the effect of games on the training of professional ethics. Some studies recommend the use of games in professional ethics education, such as Metcalf and Yankou (17) and White and Davis (11). These studies explain that the game can help develop ethical reasoning by creating doubt and uncertainty in students; however, they do not propose games as the sole ethics training strategy, but as for use along with other training strategies. Other studies that examine the effect of ethics training, such as Yeom and Ahn (6) show that, after ethical education, nursing students exhibited improved patient care, but a change in the overall score of moral sensitivity after education was not shown. Baykara et al. (18) in Turkey showed that, after training, student ethical sensitivity increased, but the change was not statistically significant. Moral education enables students to identify ethical deficiencies in the hospital and heed ethical issues. Kang (19), in South Korea, showed that ethics education to students who do not have clinical experience can significantly increase their awareness of ethical codes. They reported that ethical education creates a desirable moral value system among medical professions and enhances their ethical behavior by improving moral judgment and sensitivity. The second part of their study related to the educational strategy used to create ethical sensitivity. Blakely (20) reviewed studies that use the game method to enhance learning and reported that limited research had been done in this area. The existing studies showed that both traditional practices and game methods were effective in increasing student knowledge, but the use of game in teaching increased long-term learning by increasing the level of interest. The present study benefited from several components of increasing the ethical sensitivity and satisfaction of students. The first is the thrill and enjoyment of gaming by students that creates a dynamic environment in the classroom. The constructive aspect of this teaching method reduces stress and team work creates competition between peers. These interactions and feedback develop a comfortable and engaging environment. Although the game can be well coordinated with nursing education, unfortunately, interest in teaching through games has declined. Studies that use games in nursing education have been published only in the 1990s. Although games are a form of active learning supported by three theories of education including Piaget's cognitive development theory, the Malneon theory of internal motivation and Robert’s conflict-enculturation theory. Studies have shown that education through games also have drawbacks. When students make mistakes, their anxiety and embarrassment levels increase. In addition, games may not be a good way to evaluate individual student learning. Competition may be threatening for some students. It may also be necessary to spend time setting up the game (21). The second component that this study benefited from was the use of small groups. A review of studies shows that the presence of small groups is effective in learning the meaning of new content and its reception and maintenance in the mind (22). This study has limitations. The main limitation was the use of one intervention group and the lack of a control group. This prevented accurate comment on a possible cause and effect relationship. The number of samples was also small and from one university, which limits the possibility of guessing the results. One of the main points of this study was teaching satisfaction. This study was able to create a cheerful environment for problem-solving by students and teach ethical challenges in a warm and friendly environment.

**Conclusion**

Professional ethics training is a useful way to learn ethical issues. In the games, students are given information and immediately apply the learned knowledge to related situations. During a one-year college term, students were given the opportunity to experiment with ethical challenges and problem-solving and participate actively in discussions in an active learning environment by creating small groups. Over the course of one semester, using the game method, students were given the opportunity to carry out problem-solving on the ethical challenges by engaging small groups to actively participate in discussions in an active learning environment. It is recommended that this training method be continued for effective feedback.

**Acknowledgements**

This research received no specific grant from any funding agency. The authors appreciate the council members of the nursing school, instructors, nursing students and all those who helped them in conducting this research.

**Ethical issues**: None to be declared.

**Conflict of interest**: The authors declare no conflict of interest in this study

**References**

1. Borhani F, Abbaszadeh A, Mohamadi E, Ghasemi E, Hoseinabad-Farahani MJ. Moral sensitivity and moral distress in Iranian critical care nurses. Nurs ethics. 2017;24(4):474-82.

2. Ebrahimi H, Nikravesh M, Oskouie F, Ahmadi F. Ethical behavior of nurses in decision-making in Iran. [Iran J Nurs Midwifery Res](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4325407/). 2015;20(1):147-55.

3. Oh Y, Gastmans C. Moral distress experienced by nurses: a quantitative literature review. Nurs ethics. 2015;22(1):15-31.

4. DeSimone BB. Curriculum design to promote the critical thinking of accelerated bachelor's degree nursing students. [Nurse Educ](https://www.ncbi.nlm.nih.gov/pubmed/16980825). 2006;31(5):213-7.

5. Borhani F, Alhani F, Mohammadi E, Abbaszadeh A. Professional Ethical Competence in nursing: the role of nursing instructors. J Med Ethics Hist Med. 2010;3(3): 1-8

6. Yeom HA, Ahn SH, Kim SJ. Effects of ethics education on moral sensitivity of nursing students. Nurs ethics. 2017;24(6):644-52.

7. Jafari H, Khaghanizade M, Nouri JM, Nir MS. Developmental Strategies for Nursing Ethics Education. Med Ethics J. 2017;10(38):81-90.

8. Ozgonul L, Alimoglu MK. Comparison of lecture and team-based learning in medical ethics education. Nurs ethics. 2017:969733017731916.

9. Royse MA, Newton SE. How gaming is used as an innovative strategy for nursing education. Nurs Educ Perspect. 2007;28(5):263-7.

10. Xu J-h. Toolbox of teaching strategies in nurse education. Chin Nurs Res. 2016;3(2):54-7.

11. White GB, Davis AJ. Teaching ethics using games. J adv nurs. 1987;12(6):621-4.

12. Abigail W. Use of Games in Face-to-face Classroom Teaching in Nursing and Midwifery Education. ergo. 2014;3(2).15-22

13. Boozaripour M, Abbaszadeh A, Shahriari M, Borhani F. Ethical values in nurse education perceived by students and educators. Nurs ethics. 2017:0969733017707009.

14. Abbaszadeh A, Borhani F, Nematollahi LM. The comparison of the level of moral sensitivity in nursing students and nursing staffs in Kerman in 2009. Med Ethics J. 2016;4(12):39-54.

15. Karimi Noghondar M, Tavakoli N, Borhani F, Mohsenpour M. Ethical sensitivity: A comparison between the nursing students and nurses of Azad University. J Med Ethics Hist Med. 2016;8(5):69-76.

16. Farasatkish R, Shokrollahi N, Zahednezhad H. Critical care nurses’ moral sensitivity in Shahid Rajaee Heart Center Hospital. Iran J Cardiovasc Nurs. 2015;4(3):36-45.

17. Metcalf BL, Yankou D. Using gaming to help nursing students understand ethics. J nurs Educ. 2003;42(5):212-5.

18. Baykara ZG, Demir SG, Yaman S. The effect of ethics training on students recognizing ethical violations and developing moral sensitivity. Nurs ethics. 2015;22(6):661-75.

19. Kang S-W. The influence of ethics education on awareness of nursing students with no clinical experience regarding the code of ethics: A case study. J Nurs Educ Pract. 2017;7(10):12.

20. Blakely G, Skirton H, Cooper S, Allum P, Nelmes P. Educational gaming in the health sciences: systematic review. J Adv Nurs. 2009;65(2):259-69.

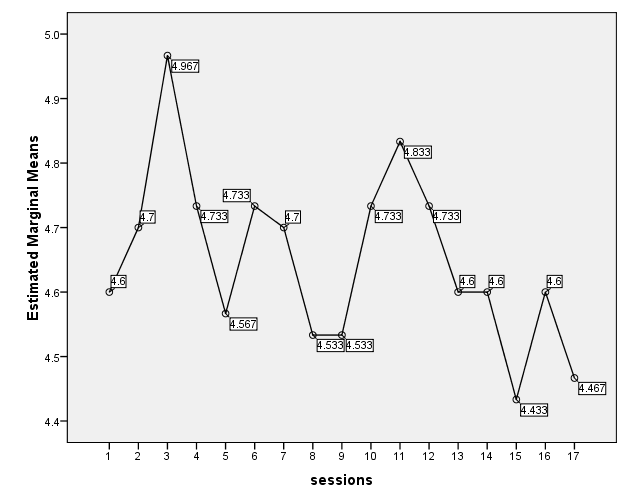
21. Oermann MH. Annual Review of Nursing Education: Strategies for Teaching, Assessment, and Program Planning: Springer Publishing Company; Volume 3, 2005. Avilable online : [https://books.google.com/books]

22. Zaher E, Ratnapalan S. Practice-based small group learning programs: systematic review. [Can Fam Physician](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3374683/). 2012;58(6):637-42, e310-6.

|  |  |  |  |
| --- | --- | --- | --- |
| **Table 2: Comparison of moral sensitivity of nursing students and its dimensions before and after training in professional ethics in nursing ethics** | | | |
| **Components** | **Before training**  **(M±SD)** | **After Training**  **M±SD))**  7/33±1/37 | **P value** |
| Autonomy | 7/6±1/61 | 0/45 |
| Relational orientation | 14/10±2/02 | 16/33±2/64 | 0/000 |
| Professional knowledge | 3/73±1/98 | 3/23±1/79 | 0/19 |
| Experiencing moral conflict | 7/53±2/01 | 7/80±2/01 | 0/59 |
| Ethical meaning | 11/53±2/79 | 13/03±1/87 | 0/003 |
| Expressing benevolence | 16/17±3/49 | 16/83±3/14 | 0/46 |
| Total Moral  sensitivity | 60/67±7/5 | 64/57±6/9 | 02/0 |

|  |  |  |
| --- | --- | --- |
| **Table 3**: **Comparison of range of moral sensitivity scores of nursing students before and after training in professional ethics in nursing ethics** | | |
| **Moral sensitivity scores** | **Before training** | **After training** |
| (0-50)Low Moral Sensitivity | 6/7 % | 3/3% |
| Moderate Moral Sensitivity (51-75) | 93/3% | 86/7% |
| High Moral Sensitivity (75-100) | 0% | 10% |

|  |  |  |
| --- | --- | --- |
| **Table 4: Student satisfaction score for ethical game sessions after course in professional ethics in nursing ethics** | | |
| **Types of games** | **sessions** | **satisfaction score )M±SD)** |
| Small group : "buzz" groups game | 1 | 4/6±0/49 |
| Brainstorming game | 2 | 4/7±0/65 |
| Card sorting game | 3 | 4/9±0/18 |
| Health Journey game | 4 | 4/7±0/65 |
| Instructor's lecture, Writing scenario about Role playing game | 5 | 4/5±0/85 |
| Role playing game | 6 | 4/7±0/52 |
| Talk in pairs game | 7 | 4/7±0/70 |
| Instructor's lecture, analyzing student assignments from the previous session | 8 | 4/5±0/86 |
| Instructor's lecture, scenario writing for hot seat game | 9 | 4/5±0/81 |
| game Hot seat | 10 | 4/7±0/44 |
| Drawing or producing Art game | 11 | 4/8±0/37 |
| Socratic debate game | 12 | 4/7±0/52 |
| game Pass the parcel | 13 | 4/6±0/72 |
| game Pass the parcel | 14 | 4/6±0/89 |
| game Case Study | 15 | 4/4±0/81 |
| Field Visits/Educational Visits game | 16 | 4/6±0/81 |
| Talk about past sessions | 17 | 4/4±0/93 |
| **Total satisfaction score** | - | ±7/7206/79 |



**Figure 1**: **The average satisfaction score of each session and its trend**