The Dilemma Game app has been developed by Erasmus University Rotterdam to stimulate awareness of, and an open and critical discussion about, integrity and professionalism in research. The game consists of dilemmas with four possible courses of action which the players can choose from. The app is the successor to the offline card game version of the Dilemma Game ‘Professionalism and Integrity in Research’ that was introduced by the university in 2016, and for which there has been a great deal of interest both within and outside Erasmus University.

The game can be played individually as well as in small or large groups. In this manual all game modes are explained step-by-step, and suggestions are given regarding the use of the app in the classroom. It is important to note that due to the complexity of integrity-related dilemmas, there is no winning or losing in this game. Rather, by defending and discussing these choices in the context of a critical dialogue, the game aims to support researchers in further developing their moral compass.

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Solo mode

In the solo mode, you can individually browse through dilemmas and vote on your preferred option that describes how to respond to the dilemma. After voting, you will be able to see how others have voted on the dilemma. After voting, the dilemma will be placed in the ‘Results’ list.

• **Dilemma of the Month:** You will get a notification once a new ‘Dilemma of the Month’ is uploaded. This dilemma will show on top of the dilemma list.

• **Expert Review Comment:** For new dilemmas, after a while an ‘expert review comment’ will be uploaded, which you can view by opening the dilemma. This review comment will provide you with additional information on how you could interpret the dilemma.

• **Propose Dilemma:** In the menu, you will find the possibility to propose a dilemma. This could be a dilemma that you faced yourself, or a dilemma you could imagine based on your experiences. Proposed dilemmas will be reviewed by an expert, and after editing they might be added to the game.

• **Categories:** Each dilemma has been classified in terms of three categorizations: Researcher position, Research Strategy, and Research Phase. Each dilemma in the app has three icons that indicate the categories the dilemma belongs to. For an overview of the icons and their meaning, please have a look at the ‘Dilemma categories’ overview below.
Group mode
(small groups of 2 – 7 players)

The group mode allows individuals to discuss dilemmas in a small group (2 – 7 players), while the app guides the players through the different discussion phases. This group mode works best when the participants are together physically, or through an online connection.
To play a group mode game

Creating a Group mode room
1. Make sure every player has downloaded the Dilemma Game app
2. In the app, go to the group mode
3. One player creates a room, gives the room a name, and selects the group mode
   a. Subsequently this player selects the dilemmas the group wants to discuss. By tapping on the filter button, dilemmas can be added based on several categories: Research Phase, Researcher Position, and Research Strategy. Experience shows that discussing each dilemma takes about 10 minutes.
   b. After selecting a number of dilemmas, the player can create a room. Subsequently a room code is displayed, which can be shared with the other players.
4. All other players join the room by going to the Group mode in the app, entering the code in the designated field, and tapping on ‘Join New Room’.
5. When all players (max. 7) have joined the room, the player that created the room can tap on ‘Start Playing!’ and the game will begin.

Playing the game (group mode)
When playing the game, each dilemma can be considered a game round. A game round is played as follows:
1. Each round a ‘main player’ is automatically selected. The main player reads out the dilemma and the four options, after which everyone gets the chance to vote on their preferred option.
2. After everyone has voted, the choice of the main player is displayed, and the main player gets a chance to explain and defend this choice (+/- 1 min.). After doing so, the main player taps on ‘I’m Finished’.
3. Now the results of all players are displayed, and all players are invited to challenge and defend the different options (max. 5 minutes).
4. When the discussion is over, the main player can tap on ‘Revote’, and all players will have the opportunity to change their vote if they have been convinced by a different perspective.
5. The round is now finished, and a new round starts with a new main player.
6. If all selected dilemmas have been played, the game will end. An overview with relevant statistics is displayed. The played game and statistics will show in the room overview on the Group page.
Lecture mode
(large groups)

The ‘Lecture mode’ is suitable for a plenary discussion of dilemmas with larger groups, such as a big class or a lecture audience. In this mode, the app will not guide the participants through every step, but this should be done by the ‘lecturer’. A link is available to show real-time results on a presenting screen.
Creating a Lecture mode room
1. Make sure every player has downloaded the Dilemma Game app
2. In the app, go to the group mode
3. The lecturer creates a room, gives the room a name, and selects the lecture mode
   a. Subsequently the lecturer selects the dilemmas to be discussed. By tapping on the filter button, dilemmas can be added based on several categories: Research Phase, Researcher Position, and Research Strategy.
   b. After selecting a number of dilemmas, the lecturer can create a room. Subsequently a room code is displayed, which can be shared with the audience.
4. Real-time results can be displayed on a screen. The lecturer can set this up by going to https://dilemmagame.eur.nl on the device that is used to display the results (such as a computer connected to a projector). Here the lecturer can enter the room code, and all results will be displayed real-time.
5. All other players join the room by going to the Group mode in the app, entering the code in the designated field, and tapping on ‘Join New Room’.
6. When all players have joined the room, the lecturer can tap on ‘Start Playing!’ and the game will begin.

Playing the game (lecture mode)
When playing the game, each dilemma can be considered a game round. A game round is played as follows:
1. The dilemma and options are displayed, and the lecturer (or someone in the audience) reads out the dilemma and options. Subsequently, every player has a chance to vote.
2. The lecturer can tap on ‘Show Results’ once all players have voted. Please note, also when not every player has voted the lecturer has the possibility to go to the results.
3. Now, the percentual results of all votes in the audience is displayed, and the lecturer can host a plenary discussion on the different options that people in the audience have chosen.
4. When the discussion is over, the lecturer can tap on ‘Next Dilemma’, and repeat the steps above.
5. When all selected dilemmas have been played, the game will end. An overview with relevant statistics is displayed. The played game and statistics will show in the room overview on the Group page.
Dilemma Game in the classroom

The Dilemma Game has been created with the objective to use the game in classroom settings, for example in Research Integrity classes or at introduction days for new staff members. There are two game modes in the app that are suitable for groups: the lecture and group mode. Both of these modes can be used in the classroom, depending on the setting. Whichever setting or objective, however, the game may be helpful in bringing to attention the Netherlands Code of Conduct for Research Integrity (2018) which is applicable to every university researcher in The Netherlands.

**Group mode**
- The group mode is ideal for large groups that can be split up in smaller groups of preferably three to five people (the app allows for a max. of seven people in group mode). Each group member will have to download the app, and each group will have to create a group mode game room (instructions provided above).
- Having split up the group in smaller groups, you could:
  - give all groups a pre-selected set of dilemmas that they will have to select when creating their game room.
  - or, you could give each group the freedom to choose their own dilemmas based on the categories.
- Experience shows that discussing each dilemma takes about 10 minutes, and that playing between five and eight dilemmas in total is the most effective: it offers sufficient variety while not becoming too long.
• After each group has played a number of dilemmas, a plenary debrief is typically helpful. This is where the game statistics provided at the end of the game may be used, as they indicate the most controversial dilemmas, as well as some other relevant statistics. Please note there is no winning or losing in this game. Therefore, the statistics are not meant to identify which people changed or did not change their opinion, but rather the game debrief may focus at the dilemmas, addressing questions such as:
  - Which dilemmas caused most (dis)agreement? Have a look at the most and least controversial dilemmas in the game statistics page.
  - Do these dilemmas relate to particular categories or themes?
  - What were the main points of contention?
  - How come people disagreed? Think of differences in experience, training, background.
  - For which dilemmas did most players change their mind as a result of the discussion?
  - What were the most convincing arguments used in the discussion?

• Depending on the particular setting in which the game is played, this debrief may be continued with a discussion on which areas the participants feel there is insufficient consensus, and how to best address such future dilemmas in their daily work, and how to achieve a more commonly shared set of values and principles.

Lecture mode
• The lecture mode is ideal for large groups, such as a lecture audience. All individuals in the audience can vote on dilemmas at the same time, and the lecturer can host a plenary discussion while the audience votes.
• Playing the lecture mode with a group does not have to be time consuming, as long as all individuals have downloaded the app already.
• Useful tip: Real-time results can be displayed on a screen. The lecturer can set this up by going to https://dilemmagame.eur.nl on the device that is used to display the results (such as a computer connected to a projector). Here the lecturer can enter the room code, and all results will be displayed real-time.
Dilemma categories

Each dilemma has been classified in terms of three categories: Researcher Position, Research Strategy, and Research Phase.

You can filter on these categories when selecting dilemmas in the group mode and lecture mode. The categories may help you to select a particular set of dilemmas that is relevant to you. The symbols are displayed on every dilemma in the game. Please note that the label 'General', refers to dilemmas that belong to more than one category (i.e. both to survey and experimental research).