ENGAGING STUDENTS IN THE PEER-FEEDBACK PROCESS
IMPROVED PEER-FEEDBACK ON TEXTS THROUGH THE
CONCEPTUALIZATION OF A BOARD GAME

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Abstract
The use of peer feedback groups in higher education is a recognized method aimed at supporting students in building academic writing competencies [1], [2], [3]. However, the structure required for students to work efficiently in feedback groups can be difficult for them to maintain. Based on nine years’ experience in facilitating peer feedback groups, we will point out several problems with current methods of face-to-face peer feedback and propose a reconceptualization of the peer feedback process as an educational game in order to overcome these problems. By drawing on the game metaphor, game theory and well-known elements of games (turn taking, time taking, a game master, rules and sanctions [4] the structure essential for working with peer feedback can be rendered both visible to and socially acceptable for the students. Furthermore, the game framework offers a way to manage the tension that often arises when peers give each other feedback. Tests of the feedback game with university students in different settings suggest that the game conceptualization offers the majority of students an efficient way of initially learning to work in peer feedback groups as well as supporting the feedback process as a whole. The tests (play testing, [4] combined with observations, interviews and a small scale survey) indicate that teaching and using peer feedback as a method are more efficient and enjoyable for students new to peer feedback when these activities are structured as a game rather than learned from textbooks.

Keywords: Peer feedback, game based learning, academic writing.

1 INTRODUCTION
Peter Elbow’s Writing without Teachers from 1973 has inspired many later terms and adaptations of peer feedback such as peer response, peer editing, peer critiquing [5], peer review [6] and peer assessment [7], [8] in addition to peer feedback. Engaging in a process of exchanging feedback with peers can help students develop their critical reading and writing skills [9], [10], [5], [11]. The digital era has created new possibilities for students to easily exchange written feedback and to assess each others’ work anonymously [12], [3]. In this article we focus on the learning potential of face-to-face peer feedback in higher education as an activity that can be carried out inside as well as outside the classroom.

Face-to-face peer feedback in groups is a distinct genre of its own characterized by a high degree of structure and the use of a set of rules to manage the process that all participants agree on [2]. The basic structure of this type of feedback is as follows: three to five students exchange texts, prepare feedback and meet to give each other criteria and reader based feedback [13]. When all participants have received feedback, the activity ends with a brief session focused not on the text but on the feedback itself (meta-feedback). During the entire process a student is selected to keep time and monitor that the rules are followed, and this function rotates. A teacher or writing consultant may initially help the feedback group get started and follow the rules. The emphasis on structuring the feedback process helps ensure that students receive detailed, specific and systematic feedback on their texts and that time is put to good use. The method also encourages students to start writing early on, gives them an opportunity to develop and reflect on their writing process and emphasizes academic criteria [9], [10], [5], [11]. At the same time it trains students’ feedback skills as well as their overall teamwork skills. The face-to-face organization means that the students not only learn from reading others texts and receiving feedback on their own work, but also from listening to the feedback of the other group members.

Structured face-to-face peer feedback is an activity that holds a unique potential for learning, but it can initially be challenging for students to learn to use the method and to maintain the high level of structure required. These challenges can hinder students from gaining the full learning benefits of the
method as well as discourage teachers from using the method [6]. Based on nine years’ experience in facilitating peer-feedback groups, we will point out several problems with current methods of supporting face-to-face peer feedback. As a means of overcoming these problems, we propose a reconceptualization of the peer feedback process as an educational board game [14]. We describe the design of the board game and show how tests (play testing [4], combined with observations, interviews and a small scale survey) indicate that the game conceptualization has potential to help students maintain the structure of a group process in a recognizable and engaging way. Finally we discuss potential problems with the board game conceptualization and its possible transfer to other cultural and educational settings.

1.1 Context

At Aarhus University in Denmark the Faculty of Arts has been offering a course in academic writing for students from the entire faculty and from all educational levels since 2001. The course is non-obligatory but gives credit. Most students come from the Faculty of Arts, but students from other fields such as economics and psychology have also enrolled in the courses. In total, an estimated number of 350 students have taken the course. The course consists of seven three-hour lessons, and as a core element of the course, all participating students meet and work in peer feedback groups three times. Initially the students read a text on how to structure the peer feedback process that also introduces them to both criteria based and reader based feedback [15] and they are divided into groups of three to five students by the teacher. They work in these groups on their own for approx 45 minutes as a part of a lesson supervised by a writing teacher who supports the groups, both by maintaining the structure of the peer feedback process and by answering questions on academic writing norms. After each completed feedback session, the group reports its combined meta-feedback to the teacher, who then discusses themes and problems with the class as a whole. Based on our experiences with observing and supporting peer feedback groups as well as students’ own meta-feedback collected and discussed over a period of nine years, we have identified the following problems with using this method:

a) Anxiety associated with engaging in peer feedback: Having to let your peers read your unfinished text for feedback is an unfamiliar situation that often causes anxiety for many students, as they can feel exposed [8], [7]. They fear critique and are unsure about what is going to happen and whether it will be an uncomfortable situation [2]. The well-structured form of peer feedback tries to reduce this anxiety through providing rules and a transparent setting, but it is still difficult for many students to use the method.

b) Lack of overview: The students often find it difficult to take a holistic view of the feedback process and to see how the individual steps are integrated in the process as a whole.

c) Skipping sequences: The students tend to forget those parts of the process that require them to reflect on the feedback process itself and thereby the learning outcome of the activity. These sequences are 1: a short follow-up on the feedback that each player gives when he or she has received feedback from all other group members and 2: the final meta-feedback, where each player reflects on the feedback process as a whole and points out what went well and what might be improved next time.

d) Lack of time keeping: The students don’t always keep time for each feedback session unless the teacher reminds them. This can result in some texts receiving more thorough feedback than others and the process being dominated by the more extrovert students [2].

e) Failure to enforcing structure: The students view each other as equals and often find it difficult to enforce the structure of the feedback process. Even for the student appointed to enforce the structure, it can be difficult to do so in a socially legitimate manner. The lack of structure creates (along with the difficulty of suveying the process as a whole; see b) increased insecurity (see a).

f) Lack of appreciation for the feedback genre: Students find it difficult to keep giving and receiving feedback without starting a discussion on, apologizing for or defending their text.

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1 Aarhus University has a total of 30,600 students and 10,500 of them study at The Faculty of Arts.

2 The course was developed by Tine Wirenfeldt Jensen who has taught the majority of the courses. Gry Sandholm Jensen has taught the course since 2010.
On a basic level, it is simply hard for some students to listen without being allowed to interrupt or respond immediately. If the students keep making excuses for their work this can become an evasive strategy that weakens the learning outcome of the peer feedback process, so that it might potentially become merely an “empty ritual” [2].

We find that students generally seem to want to follow the rules of structured peer feedback but that they have difficulty doing so because they are trained to engage in more discussion-based group work. Peer feedback is therefore a method that demands support in the form of text book material, handouts that can easily be referred to as well as access to a teacher during the feedback process.

2 CONCEPTUALIZATION AND DESIGN OF THE TEXT FEEDBACK BOARD GAME

The goal of reconceptualizing the peer feedback process as a board game is to facilitate, support and improve the quality of students’ peer feedback in a HE context. Playing a board game creates a different setting than a traditional study group meeting in a very visible manner, and elements of the game situation, such as turn taking, keeping time, and focusing on different processes at different times are crucial to structured peer feedback. The setting of a game is intended to help foster a "collaborative and trusting ethos" [8] which is necessary for engaging students in feedback.

The text feedback board game was designed using the method of iterative design which is based in play testing [4]. Salen and Zimmermann describe the process in this manner: “The game is prototyped during its development, and then played by the designers, as well as outside testers. Design decisions are based on the results of the play test, and a new prototype is created, which is tested again” [4]. We have used this approach and strengthened it with the following: the use of two or three observers at each test who focus on different aspects of the game play, observation notes, audio-recorded test games and recorded and transcribed group interviews with the players (see table 1). The method of the game – feedback – has thus been used as a method for developing the game itself. The text feedback board game is designed for four players, but it can also be played by three students. The game is presented in a box containing a board, a group playing piece, cards, a rulebook for each player and a contract sheet that is to be filled out by the group before playing for the first time. The contract sheet focuses on agreeing on the amount of text the players want to share, how many days beforehand the texts must be received for feedback, the consequences of receiving penalty cards during one game, etc. The rulebook describes the rules of the game, introduces the students to criteria based and reader based feedback and presents guidance on how to prepare, give and receive feedback. It also refers the students to a website about academic writing skills as a resource for both facilitating their writing process and for gaining knowledge of academic criteria [16].

![Figure 1: Board game with the groups’ playing piece (to the bottom left), colored individual player cards, penalty cards (“!”) and information cards (“?”). Visual design: Mads Lund Jensen.](image)

The design of the board game is intentionally simple and the aesthetics draw on familiar board games for adults, such as Trivial Pursuit. An aesthetically pleasing design helps to ensure a positive overall game experience [17]. The board consist of nineteen spaces (and a time out space) divided into five...
differently colored sections, forming a pentagon. The first four sections (pink, yellow, green and blue) are devoted to feedback on each of the players’ texts with one space for each reader’s feedback. The players are represented by colors and these are used to mark the roles of the players (feedback-giver or -receiver) at any given time. When a text has been given feedback by all of the other players the playing piece is moved to the last space of that section: the follow-up space where the writer can ask questions relating to the feedback, explain the context of the text or clarify any unclear elements. The last section of the pentagon contains the meta-feedback space and finally there is a space devoted to making arrangements for the next meeting. During the game the players have two ways to suspend the structure. If the feedback receiver wants to interrupt the feedback with a question or a short comment about the text, he or she is allowed to do so by using an information card (each player has three information cards at the start of the game). Also all players can at any time pause the game by moving the playing piece to the time out space in the center of the board. This pauses the game flow, which creates time to discuss the process or general themes concerning the feedback. If a player interrupts the structure without using an information card or tries to defend his or her text or start a discussion, he or she will receive a penalty card. Penalty cards can be issued by all players.

3 METHODS

We will now describe the different settings in which we have tested the game, as well as the methods used (table 1 provides an overview). We refer to the tests with the number in column two in the following. The students in tests 1, 2 and 2.1. responded to a call on the faculty intranet for a study group which was interested in testing the game. The rest of the students in our tests played the game as a part of a course they were enrolled in. The students participating in tests 1-3 chose which texts to submit to their group – the only condition was that the text should be a part of the students’ course work and/or final exam. In tests 4-7 the text type was selected by the teacher. This resulted in feedback on a variety of texts such as assignments, reviews, synopses, translations and teaching portfolios. We have used a combination of the following methods: a) observation notes, b) audio recording of game play, c) audio recording and transcription of group interview with the players, d) meta-feedback from the groups, e) questionnaire filled out by the players, f) audio recording and transcription of interviews with teachers. We have designed a questionnaire with twenty-one questions aimed at students. The questions fall into 5 categories: The game experience, preparation and feedback, agreements and game mastering, the use of the game and evaluation and advice. This questionnaire was answered by 18 students (out of a total of 24 students) who were following the course “Academic Writing”, during which the students used the game three times as a part of the course. We also draw on the observations and evaluation of four teachers who have used the game (tests nr. 4, 5, 6, and 7). Furthermore we conducted group interviews with the members of the two study groups (test 1, 2, 2.1.) Finally, we draw on observation notes (test number 1, 2, 2.1, 3, 3.1, 3.2 and 3.3) by either student assistants and/or one of the authors.

<table>
<thead>
<tr>
<th>Game players (nr. of players)</th>
<th>Test nr.</th>
<th>Test focus</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>The authors and student assistants (4)</td>
<td>0 (many)</td>
<td>Developing prototypes</td>
<td>Notes and sketches</td>
</tr>
<tr>
<td>Study group 1, Spanish and European Studies (4)</td>
<td>1</td>
<td>Game play/ reaction to game conceptualization</td>
<td>a, b, c</td>
</tr>
<tr>
<td>Study group 2, Scandinavian Studies (4)</td>
<td>2</td>
<td>Preparatory activities³</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>2.1</td>
<td>Game play/ reaction to game conceptualization</td>
<td>a, b, c (c concerning both test 2 and 2.1)</td>
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</tbody>
</table>

³ The test focused on how the groups used the contract sheet as a tool before playing the game (see section 2).
In total 132 students have played the text feedback game: 10 students have played the game as an isolated activity where the explicit focus was on testing the game. One hundred and twenty-two students have played the game as a part of an actual course divided among five different courses. Four teachers with no prior knowledge of the game have shared their experience with using it.  

The main purpose of our inquiry has been to find out whether the game conceptualization of the peer feedback process works and how the students react to it, and whether they find it helpful to their peer feedback process. To strengthen the student voice in this analysis, we also include students’ evaluations of the game in the form of emails to their teacher. These emails are especially important, as this is where the strongest critique of the game is voiced. The combined material has been analyzed thematically on two levels: a) the level of actual game play and b) the level of the perception and response to the game conceptualization. The framework for game play analysis is laid out in table 2. In order to gain knowledge of the perception and response to the game conceptualization we have designed a student questionnaire as well as an interview guide aimed at teachers.

4 ANALYSIS OF GAME PLAY

The initial test (test 0, 1, 2, 2.1) resulted in minor adjustment to the visual design as well as the rulebook. But the main finding of the initial tests was that the text feedback board game functioned as a game – the participants could actually play it. They were quick to decode the overall structure of the activity from the design of the playing board and did not skip any steps while playing. They made minor errors while playing but none that hindered the game process. Some errors are to be expected when playing any game that is new to the players, and when they were unsure of what to do they consulted the rulebook. In table 2 we list first the observed problem with traditional peer feedback (column 1, see also a-f in chapter 2), then we list how we have used game design to address the problem (column 2) and finally we evaluate the effect of the game designs’ ability to resolve the problem (column 3).

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4 The teacher of the course Academic Writing in test 3 - 3.3 was Gry Sandholm Jensen.
Table 2: Observed problems with traditional structured peer feedback, game design to address the observed problem and the results of tests of the game.

<table>
<thead>
<tr>
<th>1. Observed problem: Traditional peer feedback</th>
<th>2. Game design to address the problem</th>
<th>3. Results: Game-supported peer feedback</th>
</tr>
</thead>
</table>
| a) Anxiety associated with engaging in peer feedback  
- Unfamiliar situation  
- Feeling exposed  
- Fear of critique | Most students think of a game as a positive activity and accept it as a situation that requires the groups’ agreement on the rules.  
Before playing the group has to decide on how to react in different situations where group members do not abide by the rules or receive penalty cards. This creates a mutual sense of obligation about making the game work. During the game it is the responsibility of the player who is receiving feedback to move the playing piece forward, which gives the writer a feeling of being in control of the process [15]. In the middle of the board there is a time out space that anyone at any time can move the playing piece to if he or she wants to stop the game for some reason. This opportunity is another means of controlling the situation. | Observations show that most groups know how to start the game right away on the first session (after having read the material) and appear to feel confident about the process. The fact that the activity is structured by a game seems to create a safe and positive setting in most cases. In the questionnaires filled out at the end of the course, there is no mention of anxiety about participating in the activity. While this does not imply that there was no anxiety, the students do not mention this. |
| b) Lack of overview  
- Problems with understanding the process as whole  
- Problems with seeing how each step of the process fits into the process as a whole | The design of the board helps visualize the process. Moving the playing piece on the board functions as a constant reminder of which part of the process is to be focused on at any given time. | In both questionnaires and interviews the most frequently mentioned positive thing about the game is that it gives structure to the process and visually displays this structure. |
| c) Skipping sequences  
- Skipping follow up on each student's feedback session  
- Skipping final meta-feedback | The visual design of the playing board with individual spaces for each part of the proces helps ensure that no step is skipped. | All observations show that no parts of the process are skipped when the game is used. |
| d) Lack of time keeping  
- Some texts getting more thorough feedback than others  
- Extrovert students dominating the feedback process | The rulebook emphasizes that the game master must keep time and contains a table of suggested timing depending on number of players and time allotted to the game. The game conceptualisation supports time keeping since this is an integrated part of many games. | Observations show that all groups with three or more players used the time table and only a few groups had to be reminded to set the alarm during the game. |

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5 This is done when the group fills out the contract sheet before playing.
e) **Failure to enforcing structure**
- Difficult to enforce structure among peers
- Lack of structure can make it harder to get an overview of the process (see b)
- Lack of structure can increase anxiety (see a)

In a gaming context rules are required and keeping to them is necessary in order to play the game. The role of a game master provides the students with a well known and socially legitimate position in which they can enforce rules on their peers.

**Questionnaire responses on how it felt to act as game master indicates that most students did not consider the role problematic or difficult.**

f) **Lack of appreciation of the feedback genre**
- Students not able to listen without interrupting
- Students starting a discussion, apologizing for or defending their text
- Use of evasive strategies can weaken learning outcome

The visual design of the game with one space for each step makes it clear who can speak at any given time. The penalty cards and information cards function as tools to make sure feedback does not evolve into discussion. The fact that the players have to "pay" with an information card if they want to say something when it is not their turn specifically underlines that they are only allowed to interrupt the feedback as an exception.

**Observations show that the penalty and information cards were used to some extent in most groups. The questionnaire responses and interviews reveal that some groups did not find the rulebooks' description of when to use these cards to be comprehensive, and due to this found that they ought to have used the cards more than they did while using the game. The observed rate of disruptions and discussions was much lower with the game than in a traditional setting.**

Based on our observations, our overall conclusion is that the text feedback board game does in fact address most of the observed problems with face-to-face peer feedback. The problem with skipped sequences (c) is completely overcome when the game is used. Problems with lack of overview (b), time keeping (d) and lack of appreciation for the feedback genre (f) were significantly minimized by the game. It is more difficult to gain knowledge about whether the problems with anxiety associated with engaging in peer feedback (a) and failure to enforcing structure (e) were minimized by the use of the game, as these issues are connected to the students’ feelings towards peer feedback. But it is reasonable to assume that at least some of the anxiety that students might experience with peer feedback can be counteracted by the game conceptualization, because it offers a familiar, positive setting that encourages collaboration and makes the rules explicit for all participants. The game conceptualization means that students have clear expectations that the rules should be unambiguous, and this is an area that can be improved on. It is also a reasonable argument that the role of the game master provides a more socially legitimate position for students to enforce rules in a peer setting than just being appointed group leader, and that this might entail a more structured and thus more productive peer feedback process.

**5 ANALYSIS OF THE PERCEPTION OF AND RESPONSE TO THE GAME CONCEPTUALIZATION**

The main idea of facilitating the peer feedback process with a board game is to draw on the knowledge, experiences and feelings students already have in relation to one domain – game play – to support them participating in an unknown activity – peer feedback [18]. The game concept supplies a framework that clearly defines the roles and tasks for each participant and furthermore gives tools to manage the tension that arises when engaged in peer feedback. Most students view playing a board game as a fun and social activity, where as they can feel anxious towards engaging in peer feedback. In order for this intended transfer from one domain to another to succeed the students need to accept the text feedback board game as an actual game.

In a small scale survey (test 3-3.3, see table 1) 18 students who have played the game three times filled out a questionnaire on their experiences with using the game. As the structured peer feedback approach was new to the students, it is difficult to separate when they are evaluating structured peer feedback as such or the game as a tool to facilitate peer feedback. To question 2.d: *Did you in general*...
receive useful feedback from the other participants?, 10 students answered Yes, definitely, 7 students answered Yes, to some extent, 1 student answered To a lesser extent and none answered No, not at all. When asked whether they would recommend the game to others, 8 students answered Yes, 8 Maybe and 1 No. When asked the open question: “Give a short description of your experience with the game”, 6 students stressed giving and/or receiving structured peer feedback as positive (e.g. “Good way to give feedback!”) and 8 students stressed the structure of the game as a positive element (e.g. “The game has created a good framework for the feedback process, it has helped my group with structuring the task”). But four students commented in a way that shows that they made a distinction between the peer feedback method and the game as a tool to facilitate this. One student did not find the game board and token to be “super necessary” in order to “play” and states that this is only useful to gain an overview of the process. Another thought that the game concept was “too pedagogical” and might as well have taken the form of a list to be followed. One student states that “I love to play games” but miss more game play and suggest we draw on game design where the players compete against the game and not each other. Finally, one student states that “It is not a game, but a tool to facilitate a meeting”. But the overall conclusion of the small scale survey is that the students generally accepted the game framework. This is also the response from interviewed teachers in test 4 and 7, whereas the teacher in test 6 reported that some groups stopped using the game after playing it once (but not the structured peer feedback method) while others kept using the game. The teacher of test 4 had an experience with using the game that differs significantly from all other tests: her students rejected the game after trying it out once and she stopped using it.

Why was the game rejected in one course out of five? The students using the game as part of a course on Rhetoric responded very differently to the game compared to other students and this adds some interesting perspectives to the analysis. Due to their subject of study they had already worked with feedback methods and found that they had a theoretical understanding of feedback. The method they had worked with earlier was not the structured peer feedback model that the game is build on but a much more dialogue based form introduced by the teacher of the course. In our interview with the teacher she described this method as “an exploratory process where they have to discuss and come to an agreement on what criteria different text genres should live up to”. The teacher asked her students to respond to the game and some did via email. These mails show a much more critical response to the game than the other tests. The critique can be divided in two categories: a) critique concerning the lack of dialogue and b) critique that the game is not really a game since there is no winner and there are not enough gaming elements. The first category is basically a critique aimed at the structured peer feedback method as such. Since the students have already tried peer feedback in another form they felt that this new method was constraining because it did not allow them to engage in discussion. The second kind of critique concerned the presentation of the method as a game. To rhetoric students who have prior theoretical and practical knowledge with feedback, the text feedback board game was simply not game enough for them to accept as such and finding it meaningful to play it. As the teacher pointed out in the interview: “Some of them said that it probably was a good idea, but they had tried it before – they say. We know how to do it." It seems that the teacher did not completely agree with the students’ perceptions of being able to give feedback, but the text feedback board game is clearly not a solution to this.

In some ways, the rhetoric students are right. The game is itself an empty shell. It only has learning potential when used to facilitate a part of the feedback process that exists outside the game: the writing, reading and preparation of feedback that come before the game can actually be played. Criteria have also to be provided or agreed upon (from curricula, learning outcomes or specified by teacher or others). The game functions as a tool to facilitate all these steps and to integrate them in a system. The game concept appears to function as intended in most cases according to our tests. But the tests also reveal a potential drawback to using the game concept: it can become a barrier if the game is not viewed as an actual game. Another potential problem might be if the idea of the game means that the students do not take the learning activity seriously on the grounds that it is “just a game”. Several steps can be taken in order to overcome these potential problems. Most importantly, game play can be improved and we are currently working on this. However, the point should not be to add features only for the sake of better game play – all features should aim to facilitate the overall peer feedback process. This means, for example, that it would be meaningless to have a single player win the game: peer feedback is at its heart a collaborative activity.
6 CONCLUSION: TO PLAY OR NOT TO PLAY?

Two things have surprised us in testing the game. First, the fact that students were actually able to play it from the first prototype of the game. The other is the sheer force of what might be called the norm of the game. In relation to the first issue, this might not be surprising when we take into consideration how structured and well-tried the method of peer feedback is. The text feedback board game is intended to facilitate an already existing learning activity, not invent it. In relation to the second issue, we find it surprising how much more effort the students put into adhering to the rules when these are no longer metaphorical rules but actual rules printed in a rulebook. The students succeeded from the start in completing the process without skipping any steps while keeping time. They put in a lot more effort in order not to interrupt, make excuses and defend their text when they can receive a small cardboard penalty card than they do when supported by teachers who have provided good reasons why they should not do this – reasons they have agreed with. We had hoped that the game would support the process of peer feedback to some degree, but we had not anticipated how strong the norm of the game is in reality. The peer review process is “extremely complex and requires careful training and structuring in order for it to be successful” according to Paulus [6] The text feedback board game offers a way to do so that draws on the students’ prior experiences with game play. We argue that the text feedback board game holds a potential to engage students and facilitate the initial learning process of structured peer feedback as well as it appears to offer support during the entire feedback process in a higher education context. More research is needed on whether or not the game conceptualization affects the quality of the feedback and how students use the received feedback when revising their texts.

REFERENCES


