SOCRATIC DIALOGUE AS A TEACHING AND RESEARCH METHOD FOR CO-CREATIVITY?

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Abstract: *We sketch a theory of creativity which centres on the framing of activity by repetitive thinking and action, and sees creativity as divergences from these routines which is thereby framed against them. Without a repetitive frame creativity is impossible. Mere repetition is not creative, even if new. Creativity disrupts a frame, purposefully. Socratic Dialogue is an ancient technique of engaging a student in a dialogue by asking non-leading questions, aimed at revealing to the student how much knowledge he or she already has on some topic: Socrates' demonstration to the slave-boy (and the audience) that the boy already knows geometry (without any schooling) is the founding example. We aim to illustrate that internalising the Socratic kind of reflective self-questioning and co-questioning is intimately related to the view of creativity as the reframing of routine. Therefore, we have qualitatively analysed primary and secondary school pilots in Greece, Austria and the United Kingdom. The illustrations of facilitated Socratic Dialogues with children and young people have been derived from the analysis of 14 Socratic Dialogues involving a total number of 97 students. This paper outlines the Socratic Dialogue as a method of both researching and teaching creative thinking, and it reveals that the Socratic method dovetails with this conception of co-creativity. As a research method, Socratic Dialogue aims to elicit information concerning reasoning processes and shared experiences. As a teaching method, Socratic Dialogue aims to get students to internalise the public methodology of Socratic Dialogue, and to adopt it across the range of domains they meet. The students' use of the internalised method towards enabling creative thinking is illustrated by the experiences of the teaching intervention teams in the C2Learn project, using games to provide occasions for co-creativity.*

Keywords: Co-creativity, Socratic Dialogue, creative thinking, teaching method, research method

Introduction

Everyone knows it when they see it, but everyone has a hard time specifying what they mean by it, and demonstrating that they can teach it to others. There are difficult questions about whether it constitutes, and can be taught as, a general capacity or skill, or whether only by teaching excellence in one domain or another. We set out from the view that it is at least possible to say some general things about creativity wherever it is found, and that this can be helpful to teachers who have the job of enabling creativity. In psychology, at least, there is a cycle of discussion that goes roughly as follows. There is something which we can call creativity. We can design tests of it, and we can teach it. This position is followed by a critique which says, sometimes after considerable research, that no, there is nothing that crosses all domains, and can be reliably distinguished from intelligence (or more generally perhaps achievement) by psychometric testing. Then the cycle starts over.

We find this debate rather sterile. Creativity is most prominent at the highest reaches of achievement in any domain. What we mean by achievement is not so easily distinguished from the exercise of creativity, however different the particular symptoms are in different endeavors. Whether there is some abstraction that fits all cases, or even

transfers across all domains does not seem to be a good hook to get hung up on. Our question is closer to "Is there anything general that one can say about creativity which may prove useful to teachers across many domains?" We assume that even if the answer is, as we hope yes, then the way that teachers will have to incorporate it into their practice will differ wildly from domain to domain. And of course, teachers in each domain are the only ones who can adapt any useful general advice into their specific teaching practice.

This paper summarizes some of the thinking and experiences that came out of a research project on the role of gaming in teaching, and researching the teaching for creativity. One emphasis is on the gaming; another on the collaborative creativity of groups with a special focus on co-creative reframings; and a third on a theory of what creativity is and the problem of how to research whether teaching designed to provide occasions for co-creativity has succeeded, and if so how? Here our perspective chiefly from the theory/research team's perspective, illustrated by the experiences of the team's designing, applying and researching the teaching interventions. Contrary to other contributions in this issue, such as Schmoelz (2016) and Panagopoulos et al. (2016), we will have less to say about the gaming except at a rather general level.

So within our approach here, there are some points of particular emphasis. The theory will come in the next section, along with a proposal about Socratic Dialogue as a research method. A further emphasis is on the creativity of collaborating groups. Creativity in our culture is often conceptualised in individualistic terms (Guilford 1950, Rogers 1954, Maslow 1954, Engell 1981, Hutterer 1998, Gardner 1993) though this at least ignores some important aspects of creativity in collaboration (John-Steiner 2000, Chappell 2008), and the relation between creativity and culture more generally (Oral 2008.). Another emphasis is that because we are concerned with education, we are more concerned with levels of creativity which are achievable and achieved by a wide range of children, rather than only in high art or science: 'Little c Creativity' (Craft 2001) as it is sometimes known. A third point of emphasis is the role of emotion (Damasio 1999, Stenning 2002, Scaltsas 2016) and dialogue (Wegerif 2012) in creativity: often it is seen as a rather cerebral process (Dalgleish 2004).

In the next two sections, we introduce our theorizing on creativity and Socratic dialogue, and the research that grows from it. In the following section, we illustrate our approach and the specific gameplay scenarios. The findings are based on the analysis of 15 Socratic Dialogues involving a total number of 97 students.

Country	Number of students	Number of SDs
Greece	51	3
United Kingdom	24	5
Austria	22	7

Figure 1: Overview of implemented Socratic Dialogues, students and involved countries

Finally, the pupils and our experiences of our applications of this thinking will be further illustrated, and in the last section, we draw some tentative conclusions.

Theory

Our approach to creativity is through contrast with routine, because by definition, routine is opposed to the novel and creative. Creativity diverges from routine by disrupting routine and proceeding in ways that deviate from routine. Yet, routine is very important for creativity as the context against which creativity can be manifested. Without routine there is no creativity, even if creativity is divergent; for example, there is no creativity

against a background of anarchy. Routine can characterise anything from daily actions, to any type of act that is repeated according to a pattern, towards achieving a goal. Divergence, though, which comes in all shapes and sizes, needs to satisfy certain criteria before it can generate creativity. Divergence can be quantitative or qualitative. Both quantitative and qualitative divergences must be significant enough for their impact to be noticed in society or the agent, before they can count as creativity; more than that, the result must have some positive value for the agent and/or the 'audience'. Creativity is novel, where 'novelty' is not just a descriptive term of the new; it is an evaluative term, like creativity: the divergent thought needs to lead to some new idea that has value for the users, before it can be classified as creative. Merely forgetting to pair your socks may not cut it, nor will purely random acts generate creativity, unless their value depends on their randomness; for instance, the case of the 'musical dice game' which Nikolaus Simrock attributed to Mozart's manuscript K. 516f, written in 1787; or the musical cryptogram of the Bach motif, where a succession of notes important or characteristic to a piece of music are based on a random sequence such as the letters of Bach's last name. In such cases, the very point of the novelty is the randomness of throwing the dice to generate notes, or of the sequence of the name's letters in setting the notes.

Our project was concerned with co-creative thought and dialogue, which is premised on divergence being judged against a goal. The assumption is that routine thought and dialogue for such problem situations has proven insufficient for delivering the resolution goal. Co-Creativity violates the goals established by routine, delivering goals that resolve the problem at hand. The C2Learn game 4scribes allows for various types of disruption of routine, each of which might results in a co-creative reframing of the problem at hand. The routine in question is the quest for a solution to a problem, following a well-trodden path. The disruption allows the user to reframe the problem in terms of the new components that the disruption introduces; e.g. if the problem is the marginalisation of the elderly in society, the disruption may be through the use of the idea/word 'catalyst', or a diagram of a bridge; these would e.g. lead to reframing the problem by thinking of the elderly sector of society taking a central role in society as external and neutral facilitators, lobbying for, or evaluating policy proposals in society. What was distinctive about our project's approach is that we introduced a further reframing factor, in addition to the semantic or the diagrammatic factors. The new factor is based on changes in the emotional or value domains of society. In the example above, the suggestion would be that, against present routine, there is good reason to trust the elderly with lobbying for, or evaluation of policies, on the basis of their experience on the one hand, and relative career neutrality on the other. Thus, we explored co-creative reframings of problems, aimed at resolving them, through disruption of routine solution paths with semantic, diagrammatic, or emotive suggestions pertaining to the problem under investigation.

Socratic Dialogue

Socratic Dialogue seems closely suited to this conception of creativity. It is an attempt to turn the student's focus onto what is already latent within - to enable self-understanding and shared understanding through providing ways into existing knowledge. It has a tendency to sound rather grand with its historical precedent, so perhaps it is best to start by defusing the grandeur.

We can use the example of The Snowman story experiment (Stenning & Michell 1985) to give a brief illustration of how a Socratic Dialogue would work. One can, for example, imagine asking the 5 year-old child, who produces that very moving account of the story, questions such as, "What was the Boy (or the Snowman) feeling at this point?" Or, "Why did the Snowman leave?". When the child says "The boy is sad because the Snowman has to leave" one could follow up with "Why was that?", or other lines of questioning

revealing the child's understanding. With an older student, even with the same material, one could ask more abstract questions "What is the author trying to achieve at this point? "and so on. These types of questions aim at making the child's understanding explicit and reveal the ground upon which the subsequent categorisation will take place.

Another example was established by Miki Chi et al. (1989) as they observed an interesting difference between undergraduate students: some ask themselves lots of questions, especially when the cognitive going gets tough. Chi turned this observation into a highly insightful research program. She took textbook reading as her experimental situation, and got students to read aloud, and think aloud from textbooks. When they hit something that they did not understand (a fairly frequent happening if the student is in an appropriate level class) she observed that the some students would ask themselves questions about the conceptual difficulty they had encountered. Answering these questions appeared to play an important role in resolving the impasse. And if the student didn't ask (themselves), then the student more often did not `get it' - the insight into the difficulty. Some students didn't ask themselves many questions. Even more impressively, Chi went on to show that students, who did not ask themselves questions could be turned into students, who asked themselves many questions, at least with respect to self-questioning in this context, by instructions to self-question, with demonstrable benefits to their learning more generally. This result gives some assurance that something about self-questioning actually plays a key role in the change in cognitive processes. Self-questioning by students is not merely a verbal habit that happens to correlate with learning effects.

Are Chi's results a demonstration that Socratic Dialogue enables learning to be creative? Clearly not by themselves. Learning fairly mundane textbook knowledge may be 'Little c Creativity' (Craft 2001). For students changing their studying habits by beginning to ask themselves appropriate questions at suitable points, and thereby transforming their school grades, is surely a creative act. After all, for some students, this is already routine habit before Chi's intervention. Part of our point is that creativity comes in many kinds of act, and that both creativity and Socratic Dialogue are mundane, even routine, phenomena for teachers, if not for the students who benefit. Chi's results are paradigm examples of individual creativity - solitary study of a textbook. We adopted a particular interest in co-creativity – creativity that happens *in* and *between* us through collaborative and communal action. Co-creative groups engage in repetitive activities - routines - which frame their activities. Neither teaching nor learning would be possible without routine. And there are parts of learning (such as repetitive practice) which are not conspicuous in their frequency of producing creative acts. But groups do break routine frames in co-creative ways, and this cannot be reduced to the idea that individuals in groups exhibit solo creativity. In fact one might claim that all 'individual creativity' is achieved against the cultural framing of repetitive activities, and so is a case of co-creativity even when achieved while apparently `alone'. Another link between Socratic Dialogue and co-creativity is that the breaking of routine framings of activity invokes reflection. "What happened there?" Even Chi's student, who accepts the teacher's exhortation to ask themselves questions, cannot succeed by doing this in a mindless way. The activity may start that way, but to succeed the student must realise something of what is happening. Must realise the paradoxical implication that `they knew all along' but on the other hand learned something from asking their own question, and answering it. "I can learn how to ask the best question." Knowledge does not just get poured from an authority figure's brain into the student's. Knowledge can be co-constructed. Learning is an active process. The individual student is a group capable of a dialogue within the self. Two heads may be better than one. If they collaborate between themselves, they can do more than each component on its own creativity? This necessary reflective component of creative learning is a distinctive part of co-creativity. Routine is just what we don't usually reflect on.

Some readers may find this all much too abstract. After all Socrates was a highly 'irritating' philosopher. But this complaint should be defused. It's hard to write about non-verbal examples, but not so hard to enact them. Non-leading questions to one's self may not need to be much more than a feeling of "Why on earth did I do that?" or "What does that mean?" or "Why's that different?", where the `that's' are not verbal at all. The process might be much harder to study, but there is no reason why a dancer or a visual artist cannot be engaged in self-questioning reflection, and be trained to go to lengths to avoid much verbalisation. This highlights the importance of feeling and emotion. Even the most cerebral example of successful self-questioning evokes emotion. Archimedes leaps naked from his bath and runs down the street shouting. Feelings motivate breaking routine: it's an emotional business if we care at all about what we have created.

Our focus was on co-creativity and providing occasion for co-creativity through classroom activities and digital gaming. The gaming provides an interesting tension with this view of co-creativity. Games are famously repetitive. Playing paradigmatic computer games is what psychologists call a closed-loop activity. It is highly focused on a goal and is all about skill. Skill is something that has to be practiced – a routine. It is famously easier to get children to indulge in such skill learning than on reflective thinking about conceptual learning. Of course, the game-designers in C2Learn are not creating paradigmatic digital games, and are designing games that not only engender routine applications of skill, but also their creative disruption. Nevertheless, there is tension in that games themselves do not easily evoke reflection – they evoke `getting on with it'. This makes Socratic Dialogue a highly useful way of providing a reflective component for learning.

As a research method, Socratic Dialogue provided a situation in which `one can recognise co-creativity, even if it remains hard to define. It was clear to us and to the students how the process had functioned, and there was a remarkable agreement between students and researchers about which events had been important in the process. For a teacher who had the unenviable task of evaluating individual contributions to what was an evidently co-creative process, here at least was the kind of rich evidence needed: the student who had contributed a lot; the one who appeared to contribute almost nothing until the critical point where they made the decisive intervention; the student who had not really engaged. None of this would have been so well-evidenced from just seeing the group play the game and solve the problem. Seeing them reflect gave much greater assurance in judgments, particularly when you saw the participants make essentially congruent ones. We could not, by merely citing examples, be sure the effects of Socratic Dialogue are general. We could not tell whether the insights gained from the group dialogues would persist or transfer. We could not tell whether students have internalised self-questioning in the way that Chi's textbook readers did. What we could say is that internalising this kind of reflective self-questioning and co-questioning is intimately related to the view of co-creativity as the collaborative and dialogic reframing of routine. And the remaining sections of the paper will provide evidence from the more sustained interventions.

Socratic dialogue as a teaching and research method

Socratic Dialogues invite the interlocutor to examine the underlying rules of repetition and justify them in view of the goal aimed at (Scaltsas 1990). Looking into the roots of rules forces one to compare and contrast their routine to similar, but not chosen alternatives. In this process, one is led to entertain groups of alternatives to their routine, which may point to possible promising outcomes for the problem at hand. Entertaining relevant alternatives is a heuristic method that is not conceptually taxing on the agent, but may expand the space of solutions to the problem at hand.

Socratic Dialogues as group dialogues have been implemented in some lower and higher secondary schools in Greece, Austria and the United Kingdom. The following illustrations of facilitated Socratic Dialogues with children and young people have been derived from qualitative analysis of 9 different gameplay scenarios and 15 Socratic Dialogues involving a total number of 97 students (see Fig 2.).

Gameplay Scenarios	Location	Age of Participants	Number of students present in SD
Father's Death	Austria	14-15	5
Bionic Kid	Austria	14-15	5
Suicide-Attempt	Austria	14-15	4
Handicap	Austria	14-15	4
Major of Vienna	Austria	14-15	4
Shipwreck	Greece	15-16	5
Farmers Tax	Greece	10-11	24
Lost in the Mountains	Greece	10-11	22
The Circus	UK	10-11	24

Figure 2: Overview of gameplay scenarios, location and student details

Before groups of children engaged in Socratic Dialogue about what they had experienced, they participated in a gameplay session. In the gameplay session random stimuli were introduced by the children to create a story collaboratively. The main principle of the Random Stimulus technique is the introduction of a foreign conceptual element, acting as a disruptor, by forcing the participant to integrate the foreign element in the production of an idea, and bringing together disparate domains (Beaney 2005). After the gameplay session, the interviewer utilised open-ended questioning, in order to get a better understanding of the students' reasoning processes and experiences as regards the particular gameplay session. Before starting a Socratic Dialogue with students, the interviewer was advised to identify a relatively small number of particularly interesting incidents in the preceding 4scribes gameplay session. These incidents aimed to help structure the dialogue and provide focus for both the interviewer and the students. It was expected that the dialogue will branch out to other parts of gameplay. The exact nature of the open-ended questioning heavily depended upon the particular gameplay experience. The open-ended questioning is meant to establish a dialogue between interviewer and students, to facilitate the transmission of critical information pertaining to the student's thinking and experience. The interviewer's aim is to gently keep the students focused on revealing how their thinking proceeded, both while the re-framings were made, and as the dialogue unfolds, and they get the chance to reflect and negotiate on the importance of their re-framings. It is particularly important to try to encourage the students to feel that their thinking is important and to express themselves.

Reframing through Socratic Dialogue

A first example from the pilots may serve to illustrate the useful way of providing reflective components for learning. A group of 12 year olds had played a game in which their task was to find a solution to the following problem: "You are shipwrecked and bobbing around in the sea. Fortunately the lifeboat has launched itself and a crew member has climbed aboard, and is pulling people from the sea. Unfortunately, there are places for only eight more people in the lifeboat, and there are nine people in the sea". This problem invoked a most interesting emotional tone in the ensuing enthusiastic discussion. On the surface there was a rather jokey light-hearted attitude to the problem of getting rid of a surplus person. But there was also a strong undercurrent of what might even be called 'horror' at their own blithe repartee going on at the surface. This tone continued after the group had performed the task (the game-play session), and moved into a reflective

Socratic Dialogue with one of the research staff `playing Socrates'. The students turned out to be extremely engaged in reflecting on the process they had just been through. They were adept at identifying where the crucial hinge-points in the problem solving dialogue had happened, and at noting that these were the 'co-creative reframings' that had determined the course of the outcome. They also reflected on the horrors that they had been `willing' to commit in the cerebral solution of a numerical problem. They learned something about what might happen in such a ghastly situation, and the part that black humour plays, not just in a classroom mock-ups perhaps.

The interplay of humour to bear up against a horrific situation, strong engagement in reflective dialoguing and identification of crucial hinge-points can also be identified from a Socratic Dialogue that was facilitated subsequent to a gameplay session with the following problem at hand: "A girl was trying to commit suicide, but she survived and woke up in the hospital". Contrary to the shipwreck problem of the former example, this problem was not given by the teacher, but developed by the students before the gameplay session. The students identified two turning points or, i.e., reframings of the story that were crucial to them. Particularly for two students, it appeared to be crucial that "a local celebrity showed up in the hospital to support the girl". The other half of the group mentioned, that "the girl was able to leave the hospital after one week" as most important co-creative reframing that had altered their story substantially. An instance of this Socratic Group Dialogue, which has not been identified in the former example, was that students were negotiating a conflict on which co-creative reframing was more crucial to them. While two students were arguing for the very moment when the local celebrity entered the storyline, the other students were mentioning that the moment when the protagonist was saved by a successful surgery and recovered in only one week, was most important to them. After debating with each other they all came to the conclusion that the second moment was most important and interesting. This instance showed that, collaboratively, they picked the moment, which was about survival and recovery rather than the moment that was fun and exciting. They started to negotiate by posing 'what if' questions, such as "what if, she was your friend?", "what if, she was your sister?" and "what if, she was your aunt?". After some had voiced that the girl is none of those, the final word was: "But she is still human".

Dialogic reasoning using real-world examples

The students agreed that the 'survival and recovery' instance was the most crucial co-creative reframing and at the end of the Socratic Group Dialogue everyone voiced why they have finally chosen this reframing as most crucial. One mentioned that: the protagonist "reminded me of my grandma and of my grandpa. My grandpa died recently after being in the hospital for a long time". Another student said that: "If she was my sister, I would be very happy if she could leave the hospital soon, because I love her much and would sit by her bed all the time". After a pause, she added: "the same happened to my aunt". Another student referred to what happened to her and said: "I had a surgery, once, and I was in the hospital for more than one week, for 2 months. My brother also came and he cheered me up". This statement showed that students tended to elaborate their choice based on personal experiences that were closely related to the protagonist. The cause for choosing the latter instance as most important reframing might be understood as regards to personal awareness of experiences that closely related to the reframing of their choice. Three out of four students told personal stories about their grandfather, aunt and about themselves to support their collaborative choice for the 'survival and recovery' reframing. Students had been making connections between the protagonists' role in their story and their personal experiences to back up their choice. In that way, the Socratic Group Dialogue provided an occasion for students to reason dialogically about the qualities and 'weight' of two reframings. The qualities that had been

established were 'fun' and 'recovery'; however 'recovery' had been chosen collaboratively as having more 'weight', and was finally agreed to as the most important co-creative reframing.

Ethical considerations through Socratic Dialogue

Another, but quite different, example occurred during a Socratic Dialogue with students who had to come up with their own story as well. Instead of focusing on hope and survival they decided to write a story about destruction, the end of the world and a tragic future that will become a reality if we, as human beings, continue to sit back instead of taking action. The beginning of their story was: 'Plants and animals are suffering because roads are being built'. The students mentioned one reframing in the story and stated that its ending was the most important aspect in their opinion: one participant wanted the 'whole universe to decay' whilst the other group members thought this idea was 'too dramatic' and suggested that only the tree (being the narrator of their story) and the environment around it were being destroyed by humans saying that: 'the earth dying doesn't mean that everything else is dying as well'. Even though they were negotiating conflict through discussion and eventually decided to settle on a less intense ending, they still came up with the collaborative thought, 'destruction due to progress'. They all agreed to this instance being the most crucial and interesting turning point or reframing of the story and were very engaged in reflecting about their personal opinions on the way society abuses progress: 'Back in the day everything was normal and beautiful, before humans and technological progress had an impact on nature.' One student elaborated during the Socratic Dialogue by saying that progress also leads to people feeling 'less responsible' because 'we invent watches that tell us when to eat' and 'we come up with a lot of stuff no one needs'. Another participant mentioned the idea of a 'perfect world' which is conveyed to us through commercials every day giving a rather illusive picture of what makes people happy: 'If you have this, you have a perfect family, if you have something else, you have an amazing job, if you have that, you get money.' All of the group members were extremely critical about today's society and felt strongly about trying to make a change in order for the world to become a better place. This led them to an unhappy ending because: 'I really believe that an intense ending can have more impact (on society)'.

In this particular case, using Socratic Dialogue as a research method was crucial in order to understand why students decided on such a dramatic ending. Providing pupils with an opportunity to reflect on the gameplay gave an interesting insight into their thinking process prior to coming up with the collaborative choice of the 'destruction due to progress' reframing. Furthermore, it allowed them to elaborate on the different possible outcomes of the story. The Socratic Dialogue showed that the players thought a lot about the consequences of their ideas, as well as trying to use reframing in order to come up with a storyline which might lead to a change in society's perspective.

Learning through Socratic Dialogue

Another two examples derived concerning History and Geography subjects highly illustrate students' integration in a controversial situation in terms of their games' collaborative outcomes and choices. A sixth grade class consisting of 24 students played two 4scribes games (basic version). At first, students followed the challenge as detailed below: 'You are a farmer who has just paid the 10% tax on your crop. You feel wronged because the wheat that the tax collector withheld was more than your proper dues. You decide to seek audience with the Pasha and present your problem. The Pasha listens to you and...' This challenge invoked a historical era in which Greeks were under Ottoman rule, making students able to develop an empathy experience. The challenge triggered students' imagination to create fiction rather than history-oriented stories. A reflective Socratic Dialogue emerged from students' thoughts about how random cards operated

during the game playing and developed controversial arguments in terms of their outcomes. At the beginning, teacher focused on the kind of cards and students' interpretations during the creation of their stories. A boy argued: 'the word "tsaros" did not help us to complete our story just because it changed our notion of challenge'. Some students strongly believed that they got out of the historical context and they made a story which belonged to another period but they soon understood their misunderstanding and turned the story to the appropriate historical context. The teacher insisted on their references in terms of how they understood the challenge in relation to the historical context. They underlined their difficulty in understanding how people in another historical time reacted. On the other hand, students argued their fully understanding of the historical context but their stories were more fiction oriented. That happened due to their misunderstanding of the historical context and not reframing the routine of the given historical context. Discussion among all students gave them the notion to understand the meaning of the historical context and how they could operate the random cards inside this context. A girl said: 'I have never imagined that I could write a story in terms of a farmer of Ottoman Empire' and a boy concluded: 'it was the first time we write collaboratively in this subject in order to learn more about a historical era. We created a story without the book developing our imagination'. Students intervened in this challenge by creating stories which reframe the given and closed, as they believe, historical context.

Expression through Socratic Dialogue

During the second game play, students facilitated with the following problem: 'You and your scout team are lost in a mountain and you try to find the way to go back. What are you doing?' Teacher asked students in terms of the random cards and how these helped them or not in the intervention of this challenge. Students identified two points of view in terms of their return. The first one was a more easy way of going back, and the second one more crucial. Reading students' outcomes, a very interesting debate emerged. A girl criticized: 'This story has not any coherence' and a boy pointed out: 'your vocabulary was so curious!' Actually, the team answered: 'it is impossible to write a story with such cards!' On the other hand, students who followed a crucial return underlined: 'we had characters that did not help us to complete the story in another way'. Students negotiated their outcomes and they concluded with a story which seemed to have coherence and be rationally oriented, based on their every-day standards'. This challenge made students feel uncomfortable due to an open-ended context. They could not easily imagine 'what if?' happenings so as to return back. This was a challenge which triggered students' thinking but they argued how difficult was to follow the random cards even if this word was "forest" just because they lost control from their rational frame. A boy said: 'these words indicate only one way of thinking. We cannot freely move during the story'. This activity made students to negotiate more seriously the notion of "what if?" as well as to make clear in their mind why a simple word could confuse them, losing their control. Some students felt uncomfortable with this reframing in geography scenario.

Continuing co-creativity through Socratic Dialogue

Socratic Dialogue was used to discuss the story and how cards were used for the construction of it and was instrumental in revealing students' creative thinking. The direction of the questioning was used differently in two separate pilots and was able to provide an overall picture of what occurred both during story development and in the way the game was played. In both pilots the students were asked to construct the story around a dilemma of whether to save the animals or save their parents' jobs in the circus using 4Scribes. The scenario provided was that the circus was cruel to the animals but the players' parents worked there so would lose their jobs if the circus was closed down.

In the first pilot the questioning was directed towards how the cards were used for the construction of the story. Students were also asked for an overall view of what happened in the story. The reflective discussion which took place during the Socratic Dialogue allowed the students to think about the overall theme of the story. When one student was asked what the story was about he stated that "ours was more about death" and that "everyone wanted to kill everyone off". The same student later identified where this didn't occur however, and actually expressed surprise "her birds were put on show but they *didn't* kill anyone", it is interesting here that the student referred to then questioned whether she should have been killing someone "was I supposed to kill someone? This suggests that although the student made choices during the game, her confidence in her decisions were undermined by the dominant speaker in the Socratic Dialogue, thus demonstrating an element of loss of control. As the Socratic Dialogue continued it revealed another contradiction to the student's belief that 'everyone was killing everyone off' when another student said that she used her card to "bring everyone back to life". Although there was no discussion between the students about the contradictions that occurred during the Socratic Dialogue, it is interesting that the reflections showed how differently the students interpreted what had happened in the story. In another example the Socratic Dialogue allowed one student to completely reframe what occurred in the original story to enable it to fit better with the dilemma. This was done in such an unusual way that it demonstrated a high level of intervention and reframing. The student in question was describing his card and how he used it, he used the 'quest' to go back in time to get a quest from God to help to "destroy the circus and the people making it". When asked why he brought in God another student gave him the suggestion that it was because he was powerful so he answered "because he was most powerful and pulled the Devil out", he then went on to say that "God could allow him to summon in the Devil to protect the circus and not trying to get the animals" and that "the Devil helped him with God's task of destroying the circus so the animals weren't endangered". This example shows the student really thinking about the representations of God and the Devil and shows his thought process to arrive at the conclusion he needed to protect the animals. First he says that God is going to destroy the circus and the people making it, showing God as bad, then he describes the Devil as good by saying God summoned him to protect the circus, finally he brings it to the conclusion that he could use the badness of the Devil to help with God's good task of protecting the circus. Here, the Socratic Dialogue was instrumental in allowing the intervention and reframing of the goodness and badness of God and the Devil was used to ensure that the student tackled the dilemma without hurting the animals.

In the second pilot questioning was directed towards why students used their cards in the story construction and how they thought their choices affected gameplay. One player thought the cards helped them to be more imaginative when she said: "The different words made you think about something else". However, the Socratic Dialogue also helped the players to make further connections about the story even after the game had ended. For example one player thought deeper about the choices of using different types of cards during gameplay and that using the characters to build the story and leaving objects to end the story was the best way to play it. She thought that the story would not have worked otherwise "You can do anything with the character, you can fit it in easily with the story". In another example one player thought that her card [fallen] would not have worked if another student had not made his character fly, and the player who made his character fly thought that he wouldn't have been able to do that without the magic he had been given (through the cards). Here, the boy was made to fly in order to reframe the story to bring it back towards the theme, demonstrating the many aspects of the thought processes of these students. In both cases here, the Socratic Dialogue allowed the players to think deeper about the connection of the other parts of the story to their choices and used

intervention and reframing in order to think about how and why these were made. Players also analysed how the game was played: "it was better [to go last] because you could kind of end the story the way you liked it, but then it was harder because you had to incorporate all of the other ones [cards]. Another player recognised that "you have to read the cards in front and think about what they talked about" and that "You can make the story how you like".

Summary

The examples showed that the Socratic Dialogue allowed the players to think about other possibilities and how their choices had encouraged co-creative reframing of their experiences. It also showed that different questioning techniques can allow the students to think about many more aspects of the gameplay. When questions were used which were directed towards how cards were used in relation to the story, students seemed to interpret the story differently, show deeper thinking and continue to co-creatively reframe to fit with the theme whilst thinking about ethical choices of the students. On the other hand, when questioning was directed towards why cards were used and how the choices affected storyline, it allowed the students to reflect on the deeper connections within the story and demonstrated students' understanding of the rules and that they have consequences. Subsequently, both examples show that co-creativity is still occurring after gameplay through the use of Socratic Dialogue and that different questioning can further enable this progress.

Furthermore, Socratic Dialogue operated as a teaching method. In the history subject, Socratic Dialogue operated more as a teaching procedure because the discussion focused on students' misunderstanding the historical context and thus their attempts to come back to it. In addition to the previous mention, students developed their possibilities on how their stories would be completed. In the geography subject, students evaluated their outcomes and they argued for their choices and how random cards reframed their thinking from the first thinking to their final decisions. Random cards enabled students to think differently and overcome their routine thinking.

Conclusions

In conclusion the analysis of the Socratic Dialogues illustrated how differently students interpreted what had happened in the story during the gameplay and how they continued to reflect on their choices when intervention and reframing occurred during the dialogue after the gameplay. This seemed to lead to ongoing changes in the dialogic and cognitive processes of the students on a number of occasions, for example: the occurrence of the theme of death during the Socratic Dialogue prompted a student to question whether the choices she made were originally meaningful, and another student interchanged the concept of God and the Devil a number of times during his reflection to make it fit in with his original choices. In this way the Socratic Dialogue was instrumental in ensuring the cognitive process and the dialogic experience did not stop when the gameplay had ended, which could suggest that intervention and reframing could be a continuous process.

The implications of Socratic Dialogue as reflecting on and continuing of the process and experience of intervention and co-creative reframing are twofold for investigating the value of Socratic Dialogues as a teaching and as a research practice.

First, using Socratic Dialogue in classrooms might provide occasion for identifying, pinpointing differences in quality and weight of co-creative reframings, and dialogically reasoning on prioritisation of reframings based on their quality and weight. Here, further questions arise: Who is identifying the reframing? Is it the child actively engaging in the

Socratic Dialogic experience? If yes, how did the children identify the reframing and how did they decide on differences and prioritisation? What is it about Socratic Dialogue that helps the child identify reframings? What role do the questions posed in the Socratic Dialogue play? One instance, in which the children were identifying two different reframings: "a local celebrity showed up in the hospital to support the girl" and "the girl was able to leave the hospital after one week" illustrates how children use the Socratic Dialogue experience to pose questions to themselves. Posing questions to themselves and, therefore, taking the control from the interlocutor and 'owning' the dialogic experience have been shown crucial to deciding on differences and prioritisation of reframing. In this instance, they started to negotiate by posing 'what if?' questions, such as "what if she was your friend?", "what if she was your sister?" and "what if she was your aunt?". Thereby, the children came to the conclusion that the reframing: "the girl was able to leave the hospital after one week" was the most important one. In that case, the Socratic Dialogue helped to identify and diagnose the preceding gameplay experience and decided on differences and prioritisation of reframings by opening a dialogic space for the children to pose questions to themselves, and, therefore, internalising the Socratic kind of reflective self-questioning and co-questioning.

Second, Socratic Dialogues might provide occasion for children to go back to the story, reframe it in a reflective manner and further develop it. Here, it is less diagnostic for deciding which co-creative reframing was more crucial, while further development of the story by additional reframings becomes crucial. Students' reaction when hearing others' stories made them understand what they wrote during their gameplay and reframe their outcomes. A team argued that the random words did not help them to make a story such as the others ones, and wondered whether if they changed cards perhaps their story could be more appropriate. This operated as a stimulus that enabled the teacher to use it as a reflection to what further could be written with these cards. Some other students responded to this question also; it made them capable of understanding that they can make stories using any words. This made students reflect again on their outcomes, and the teacher could create a non-hierarchical pedagogical environment in which teachers' questions and students' self-questions encourage the learning progress.

The twofold conclusion of this study is that Socratic dialoguing as teaching and research practice can pertain to the *reasons* and *justifications* of what is being discussed. This leads to further understanding both, for the teacher/researcher and the children. It also opens possibilities of finding more solutions, creatively, because reflection is a type of exploration of the network within which a problem arises. Still, the difference between Socratic Dialogues as occasions for retrospective diagnosing of reframings and clearer understanding of the story as developed earlier in the gameplay, by contrast to Socratic Dialogues as occasions for co-creative reframing and further development of the story keeps being an elusive difference. Of course, this realization triggers future questions, such as: From which epistemological perspective would this elusive difference be judged problematic in using Socratic Dialogues as research method? Are there any epistemological perspectives that would see the integration of this diffusion as meaningful for research? This is food for further thought and study.

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