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Observe and explore: empirical studies about learning in creative writing and the visual arts

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Chapter 1

INTRODUCTION

1. MINI-C CREATIVITY

Beghetto and Kaufman (2007) predict that mini-c creativity will play a role in new developments in creativity research and theory. Mini c-creativity represents one side of the continuum ranging from mini-c creativity via little-c creativity towards Big-C creativity. Big-C creativity is creativity by eminent persons who have produced extraordinarily creative products in, for example, music, science or the visual arts. Little-c creativity is everyday creativity, which can be acquired by almost anyone after some schooling or experience. Mini-c creativity is even smaller, everybody has experienced mini-c creative moments while engaged in the execution of tasks. It is micro level creativity, taking place in the context of a process, at the cognitive level.

A product can be considered creative if it is both novel and appropriate (Amabile, 1982). Whether something is creative in a Big-C sense or in a little-c sense depends on judgments by others. Creative performances can be compared and evaluated for originality and appropriateness. Mini-c creativity, however, relies on intrapersonal judgment. It is a very personal creativity, located within the work process. Whereas Big-C and little-c creativity are product qualifications, mini-c creativity is a more dynamic, process-based understanding of creativity. A mini-c creative moment can be a single decision in the process of making a painting. Because of this process focus, there is a strong link between mini-c creativity and learning. Learning as personal knowledge development through interpretation, transformation and reorganization of new and existing knowledge involves mini-c creativity.

According to Beghetto and Kaufman (2007) it is interesting to study when, why and how a new discovery in a learning process takes place. It allows one to study what cognitive behaviour preceded a discovery and what behaviour followed after the discovery. Transitions from mini-c creativity to little-c creativity and sometimes

even to Big-C creativity are interesting learning processes, which may be studied through microgenetic methods such as process tracking.

From an educational perspective, these mini-c creative moments are important, because they are related to learning. In this dissertation we included an empirical study on the writing of poetry, which provides insight into these mini-c creative processes in poetry writing by secondary school students. Insight into mini-c creative processes enabled us to design experimental lessons to support artistic creativity via observational learning. The other two empirical studies in this thesis describe and discuss the effects of observational learning on students' creative processes and creative products. Observational learning is learning through observing others, peers in our case, at work. We studied the effect of having students observe, compare and evaluate mini-c creative moments of peers. We showed these mini-c creative moments by using videos with peer models who thought aloud while being engaged in creative work. We hypothesized that students would learn from observing these mini-c creative processes.

In Figure 1 we present a mini-c creative case from our observational learning videos (experiment chapter 4). First the context of the video is described: the task the video model works on (designing a bag for a foundation for cardiovascular diseases). Then we present the thought steps of the model in the video: the student model does not know yet what he will do with colour. At first he thinks the background and the handles of the bag he is designing need to be the same colour: green, but then he abandons this idea. The work-in-progress cues him to make the handle resemble a 'neck', which he had not planned before. After colouring he sees that the pink and blue handles resemble a real blood circulation system in which oxygen rich blood and oxygen poor blood meet, as he learned in his biology classes. This is an appropriate solution as he is designing a bag for the Dutch Foundation for Cardiovascular Diseases. The student decided to keep this idea and elaborate the final product as shown in Figure 1. The observational learning videos we used included such 'good models' as well as weak examples. We assumed that especially the contrast between approaches of weak and strong models stimulates students to pay attention to the relevant mini-c creative processes.

2. OBSERVATIONAL LEARNING IN SECONDARY ARTS EDUCATION

In upper secondary education, art education aims at developing students' creative processes. As part of their final examination in visual art, students have to demonstrate a creative process characterised by investigation, many sketches and seeking alternatives. Ideally, the final collection consists of many half products and try outs and some final products. Moreover, students have to be able to verbalize their work process and compare it to the work process of artists. How can we teach students effectively to demonstrate this type of processes and reach this level of reflective competence?

Figure 1: Video case- experiment Chapter 4

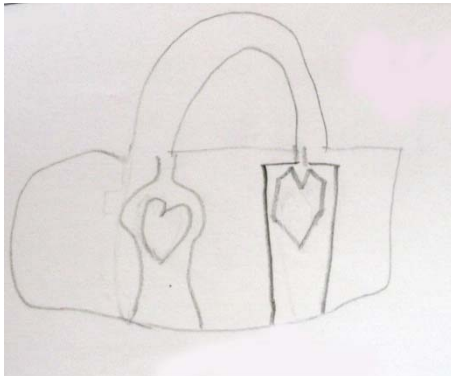
Context of the video

The model in the video is designing a bag for the Dutch Foundation for Cardiovascular Diseases. He is working on a sketch. The design briefing states that the foundation has a special campaign to reach women. Therefore, the student started to sketch male and female silhouettes. The video starts when the model starts to think about the colour he will use.

Thought steps of the video model

- 1) What can I do with colour?
- 2) The female silhouette will be pink, that is more feminine
- 3) The male silhouette will be blue, that is more masculine
- 4) The background will be green
- 5) Maybe the handle can be another colour than the background
- 6) Maybe I can make the handle the neck of the silhouette.
- 7) So then I will make half of the handle pink, the other half blue
- 8) Hey! It is just like a real heart, as in biology!

Sketch



Final design



Task for the observing students:

The student in the video discovers something.
Please, arrange the thought steps of the student in the video in the right order.

(the 'thought steps' above were presented in random order)

Many teachers provide students with direct instruction about fixed process steps ('strategies'), such as brainstorming and making a collage, towards the production of a final work. Sometimes, students even have to produce a fixed number of sketches at certain stages in the creative process. Usually students have to keep process logs during their work with the purpose of reflecting on their processes. But in our experience this reflection is not always meaningful to students, as it is generally known that in some cases students write a completely fictitious process report and produce the missing sketches afterwards. The question is whether simply *telling* students to take certain process steps actually *teaches* them how to do this. We assumed that students may learn from observing others, who talk and think aloud while at work. This observation may provide them with information of what a certain creative sub process actually entails. We hypothesized that observation of others leads to better results on both product and process than practice only or practice guided by process steps.

In this thesis we focus on students in the 9th and 10th grade¹ as they are about to start learning about the creative process. Does observation help them to engage in more effective processes and make more creative products? Does it work similarly for visual arts, which are taught in school, and poetry writing, which is not taught in Dutch schools?

3. ORGANIZATION OF THE THESIS

Chapters 2,3 and 4 of this thesis are based on published or submitted articles. We chose to present the text of these chapters in this article format, which makes the chapters independently readable. However, for this reason, the theoretical sections of the chapters overlap to a certain extent.

As we described above, the aim of this research project was to examine the effects of observational learning for creative, artistic tasks. Observational learning is a form of (cognitive) modelling. Students learn from observing and evaluating overt behaviour and thought processes of others. Following Braaksma, Rijlaarsdam, & Van den Bergh (2002) we decided to implement observational learning through video modelling. So, students observed and evaluated others, peers in this case, by watching videos. To produce observational learning videos, we first needed to examine the behaviour and cognitive processes of students when engaged in creative work. This was the purpose of the first experimental study: we studied students' creative processes while working on poetry tasks.

In chapter 2 we describe the poetry writing processes of students in secondary education. We relate these processes to the quality of their final poems. The writing processes of the students were recorded with a keystroke logging program called 'Inputlog'. This enabled us to virtually replay the writing sessions and code the actions of the students. The composition process was described with regard to frequency and organization of text production, pausing and various revision activities.

¹ US grade 9 and 10 are equivalent to Dutch grade 3 and 4 of secondary education.

We found that different students distribute their writing activities differently over the writing process. The stronger poems were preceded by a lot of text production at the start of the writing session and many revisions on a large scale at the end of the writing session. Although Inputlog only enabled us to study overt behaviour (and no cognitive processes), we experienced that the work-in-progress in combination with the students' actions provided us with useful insights into creative processes of secondary school students when they are writing poetry.

In chapter 3 we report on a second empirical study. In this experimental study we examined the effect of observational learning on the production of poems and collages by secondary school students. Findings from the poetry study in chapter 2 and actual student behaviour were combined with findings from the literature about creative processes to produce observational learning videos. We conducted two experiments, one in the domain of creative writing and one in the domain of visual arts and tested whether students learned more from observing these videos than from practising the tasks. Effects were measured on creative performance, creative processes and attitudes (intrinsic motivation, task value and self-efficacy). We included two observation conditions: observation with a focus on a relatively strong model and observation with a focus on a relatively weak model. In both conditions the same videos were shown: pairs of weak and strong students at work, but the focus for comparison differed. We hypothesized an interaction effect: stronger students would learn more from focusing on a strong model and weaker students would learn more from focusing on a weak model (model similarity hypothesis, Braaksma et al., 2002). Positive results of observation were found on creative performance, processes and attitudes for collage making. For poetry writing, positive results of observation were found only on the process. We did not find evidence in support of the model similarity hypothesis.

In chapter 4 we report on the second empirical study on observational learning. As the results of the first experiment in the visual domain were promising we decided to deepen and extend our understanding of observation in this domain. We also chose to use another type of task: graphic design tasks. Two conditions were compared: learning from observation and learning from practice with direct process instruction. Effects were measured on product creativity and on creative processes. We demonstrated that observation was beneficial for product creativity as well as for certain creative sub processes. In addition, open learner reports (De Groot, 1980) were written. The results showed that students were more process oriented after observation while students in the comparison condition were more product oriented. Finally, we examined the process-product correlations at the pre-test and the post-test. Different correlations for the pre-test and the post-test were found. We concluded that the underlying processes changed as a result of the intervention.

Chapter 5 and 6 are both discussion chapters. In chapter 5 we summarize our main findings and we compare the two experiments (chapter 3 and 4) with regard to the methodological decisions we made. Furthermore, we make suggestions for future research on observational learning in arts education and on creativity in arts education.

In chapter 6 we discuss unresolved issues. First, we elaborate on creative processes of students in visual art production. Our descriptions are based on literature and have been enriched with empirical material. It is explained that especially the interactivity with the work-in-progress is essential for creative performance. Hence, this should be the content of observational learning videos. Finally, we describe in detail the relevance of our findings for educational practice and possibilities for implementation.