Multimodal Representations and the Construction of Knowledge

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Helena Danielsson, PhD, Dalarna University, Sweden, hdn@du.se
Ana Graviz, PhD, Södertörn University, Sweden, ana.graviz@sh.se
Birgitta Odelfors, PhD, Örebro University, Sweden, birgitta.odelfors@oru.se

Purpose and method

This study is a part of the research project, entitled "Performing Knowledge. A project to improve knowledge in higher education through a double perspective; Theory and Performance". The project is supported by the Swedish Research Council and covers a three year period (2008-2010). The project will contribute to educational science by analyzing experiences from five different departments of higher education: four pedagogical departments and one department of Art, Culture and Communication. The researchers who have participated in the project as a whole come from Malmö University College, Dalarna University, Örebro University, Södertörn University (Stockholm) and University College of Arts Crafts and Design (Konstfack, Stockholm/ head). The overall project is composed of three different sub-projects. The subject matter has been treated out of the same main purpose, but each sub-project has its own specific targets.

In this paper we concentrate on the second sub-project, researched by Ana Graviz (Södertörn), Helena Danielsson (Dalarna) and Birgitta Odelfors (Örebro). All three research team members have backgrounds in educational science (Ph D in Pedagogy). Our fieldwork has been carried out on three different teacher training programmes: Media Education, Visual Art, Education and Teaching: Media, Gender and Ethnicity. The first fieldwork phase was carried out at Dalarna University in the spring of 2008, the second phase at Örebro University in the autumn of 2008 and the third phase at Södertörn University in the spring of 2009. Data from the three fieldworks phases is being cross analyzed.

The aim of the study is to examine how different kinds of knowledge appear in learning processes as well as in students´ dissertations. The study has focused equally on forms of multimodal representation and their presentations.

The main purpose is to consider the following: "To explore what happens when the students receive the opportunity to use different multimodal tools to perform knowledge and create new representations and presentation forms in their academic dissertations." Research questions raised by the three universities are related to both theoretical studies of knowledge construction and multimodal representation of knowledge:

- What happens when these different areas act together in the creation of new knowledge?

- What kind of representations can be used in order to express scientific knowledge?

- In which different ways could it be possible for the students to use and link theories and new tools for performing knowledge in their learning processes and academic dissertations?

- How does one examine and mark a multimodal text? How should the text be produced to fulfil the scientific criteria established at the University?

Regarding the first two questions, with the word representations we mean the student's research results as well as the student's knowledge and learning process. Through these combined processes the students will gain access to theories and also to questions as tools for performing knowledge.

In our part of the study we focus on how different forms of knowledge manifests itself and can be expressed and represented in the student's interactions with different media texts. This kind of knowledge construction is particularly important within the contemporary teacher training programs based on sociocultural pedagogy theory (Säljö 2005). In our work we take inspiration from visual literacy (Mirzoeff, 1998, Mitchell 1995, Pink 2001/2007) and media literacy (Graviz 2002, 2008, Danielsson 2002, Kress 2003). Data has been collected using ethnographic methods in which the researchers follow students and their dissertation projects, observe and make interviews with both students and teachers. This material is collected with tape recorder, video and photo camera.

The designs of the studies are similar at the two universities of Södertörn and Örebro. The target group is C-level students, which means students in the last term of their teacher training degrees. The collection of data started, as mentioned above, in the autumn of 2008 at Örebro University, and covered a course of 20 students, where the model had never been experienced before (5 students chose the new option to use multimodal text). The data collection continued in the spring/autumn of 2009 at Södertörn University, in a class of 16 students, where the teachers had, using different methods, previously tried this kind of multimodal expression within the media courses in the teacher training programme (2 students chose the new option of using multimodal text). Pictures and moving pictures produced by the students are of a special focus in this part of study.

At Dalarna University the field study was carried out within the framework of the Teacher training programme in Visual Art, the C-course. Data at Dalarna was collected during the spring of 2008 and covered 18 students participating in this class. The course includes image theory, photographic image theory and a third main part where an artistic and pedagogic development work is presented. The focus is on the period of the course where a visual representation and a writing report are completed. The study here concerns the process as well as the examination form of this work. A special interest is related to areas concerning disfunctionality (5 examination works were selected).

Preliminary findings

At Örebro and Södertörn universities the first finding concerned the matter of acceptance of the institutions that will examine the work of the student. By acceptance we mean that the multimodal text in a piece of academic work is given the same academic recognition as a "traditional written text". The next step was to modify existing curricula for C-level students, which task the institutions took responsibility for performing.

Another issue indicates that there are difficulties in finding mentors with adequate knowledge to guide students and also to evaluate their academic and multimodal texts. In these kinds of text it would appear that evaluators need to consider other forms of scientific and ethical criteria than the traditional ones.

We find that using multimodal representations in academic works increases the reliability and the transparency of the analyses, in particular with respects to topics which usually are difficult to communicate. In our material we have observed that using different forms of expressions could visualize other kinds of experience and knowledge than written text. One example of this is that the student is offered a way show how method choice might give different effects. The multimodal parts could also offer other possibilities to communicate the results.

At Dalarna some other aspects are notable. What is seen here, in contrast to the others, is the way that a public place has been used as a part of the multimodal representation. In the initial analysis the impact of this on the students was noticed – both in a positive and a negative way. Another aspect is the way that the theory and artistic work have been weaved together in a step-by-step process, in order to examine the research question that was set in the project aim of each student. It would be interesting to examine this part more. A third aspect to stress in the forthcoming analysis work is the extent to which students, through this kind of mixed ways of handling theories, also seem to be affected with emotions – pointing out that they in this kind of work "learn a lot about themselves". Theory, and dissertation work in general, is always a means of cultivating the growing process of the student. But it might be the fact that here they use themselves – as persons, individuals, like "instruments" (or tools), in a more visible way. It might have been harder, both in the process and in the presentation part, although it also might have stimulated some of them into dealing with new material - both technically (like art material, creating methods..) as in their search process into understand existing theories and to even express new theories. We are curious to see more of which kind of theory literature and which kind of tutoring that was of a certain importance in their process.

We expect that the study will increase the awareness of multimodal representations of knowledge and what kind of knowledge that might be possible to represent by different expressions. In addition the study will also contribute to the discussion about the possibilities of using multimodal representations in teacher training dissertations. Our intention is to publish an article in an anthology of the whole research project.

In the session we will present and discuss excerpts from our empiric material; such as photos, sound tracks, video strips and selected parts of dissertations. We want to discuss concepts as esthetical learning processes, performance, creativity and an extended text concept. We will also examine the use of traditional scientific concepts when using an extended text concept that includes written and oral words, pictures and movies.

The session will also include examples of areas concerning disfunctionality. Among other things the process of learning about tactile art or exploring how audio experience can be transferred into visual art will be discussed. Another topic for discussion is the student´s use of multimodal tools as a more personal way of searching for theory in identity related work.

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