



Deepening visual literacy through the use of metacognitive reading instruction strategies

Abstract:

Art education develops literacy through the 'reading' of visual texts. This entails the exploration of images, how they were produced and the experience of those who view and interpret them. Multi-literacies such as the skills, knowledge and the ability to interpret varying texts and artefacts and the negotiating of meaning generated by texts develops in the process.

Social semiotics explores the potential of art to develop literacy practices in which thinking through sign systems is necessary to read and produce a semiotic system or text. Learning through sign systems enables students to perceive their world in new ways, solve problems, read and write, and create interesting texts.

Visual literacy studies prove to be a problem for many students. Undergraduates often find it difficult to read and interpret visual information and produce an art appreciation and analysis assignment on that information. Many education students find it difficult to analyse the art elements and visual symbols.

The use of metacognitive reading strategies deepens the experience and improves the visual literacy of B.Ed. students, enabling them to present assignments of a higher quality. This achievement can positively affect their entire academic performance due to the intensification of the learning process and acuity of perception.

Keywords: *Visual literacy, art elements, visual information, symbols, appreciation, meaning, multi-literacies, bilingual, art appreciation, metacognitive strategies*

1. Introduction

The images portrayed in art can be an endless source of knowledge. Visual literacy is an integral part of art education in the curriculum for grades R-9. Unfortunately, very poor results for their visual literacy assignments have proved that most pre-service teachers in the Bachelor of Education programme have a lack of knowledge regarding the art and artists of their own country and the rest of the world. Coupled with this shortcoming is an incapability to read and interpret the visual language in images and artwork. This leads to deficiencies in visual literacy and as such missed opportunities to deepen literacy and broaden knowledge acquisition. One way of enriching the courses for pre-service

teachers is to introduce visual literacy as a 'language' and a vehicle for the attainment of academic depth.

The curriculum that pre-service teachers are trained to teach in schools is called the Curriculum and Assessment Policy Statement (CAPS). Creative arts, as set out in CAPS, is a compulsory subject from grades R-9. Creative arts comprise the creation of two-dimensional work, the creation of three-dimensional work and visual literacy. The CAPS document proposes the following standard for Creative arts:

The main purpose of creative arts is to develop learners as creative, imaginative individuals, with an appreciation of the arts. It also provides basic knowledge and skills to be able to participate in arts activities (CAPS, 2009: 6).

Students currently enrolled are the product of a so-called 'failed' school curriculum. The literacy level in the country challenges the quality of our education as it affects students' ability to learn independently by reading (Zimmerman & Smit, 2014: 1). The poor literacy levels of many students when it comes to reading and writing in their mother tongue, let alone any of the other languages that are spoken in the country, is evident at many universities. The reading of visual language follows the same alarming pattern.

Based on this problem, this article argues that the visual literacy levels of students in a generalist training programme can be increased by means of the implementation of a model based on the theory of social semiotics combined with adapted metacognitive strategies for reading. A model was designed to determine if second year Bachelor of Education students who registered for the module art education were able to appreciate and interpret work by a contemporary South African artist, then analyse it and describe their observations in text. This study aimed to determine whether the application of this model enhanced education students' visual literacy by assisting them in analysing the visual symbols and comprehending the conceptual meaning and metaphors in the work of Penny Siopis.

Penny Siopis, a well-known contemporary artist, was chosen for the experimental group because of the strong narratives of South African history symbolised in her work, the evident feminist concepts and her large oeuvre spanning several decades. With permission to use her artwork, I report on the study.

2. Visual literacy

According to Eisner (2002: 8), literacy is associated with high-level forms of cognition. There are diverse ways in which people can be literate, making meaning in different cultural or social contexts. The skill is termed multi-literacy. Visual literacy is the ability to find meaning in imagery. It involves a set of skills ranging from simply naming what one sees, to complex interpretations on contextual, metaphoric and philosophical levels (Eisner, 2009: 8).

Many aspects of cognition are called upon such as personal association, questioning, speculating, analysing, fact-finding and categorising. According to Yenawine (1997: 1), "visual literacy usually begins to develop as a viewer finds his/her own relative understanding of what s/he confronts, usually based on concrete and circumstantial evidence. It eventually involves considering the intentions of the maker, applying systems for thinking and rethinking one's opinions, and acquiring a body of information to support conclusions and judgements".

Visual literacy learning can lead to the development of a critical eye and independent thinking. It includes analytical and verbal-based skills to describe the formal elements of art and the knowledge to interpret artworks. Mastering the vocabulary and awareness to evaluate, interpret, describe, enter into discourse and communicate aesthetic observations about artwork, can lead to complete artistic literacy (Wright, 2003: 145).

Visual literacy is a learned skill, not an intuitive one. One becomes visually literate by studying the techniques used to create images, learning the vocabulary of the elements of art such as shapes and colours, identifying the characteristics of an image that give it meaning and developing the cognitive skills necessary to interpret the ideas that inspired imagery. This skill relates to a person's ability to interpret and create visual information. "It is the first step in acquiring visual intelligence essential for critical thinking in the 21st century. It is an important skill to have in the professional world where digital images are more often used as a means of communication", states Burmark (2002: v).

Knowledge is becoming increasingly dependent on the visual. There is an emergence of new visual technologies and new multimodal forms of the visual. This leads to expression and communication in a wide variety of visual forms and materials – including multimedia, web, video, photography and film, along with expressions and communications through design objects and the more traditional forms of art and crafts. Many of these forms of visual expression and presentation are encountered in everyday work and life. The omnipresence of visual information and communication in contemporary society means that artistic and visual literacy are increasingly as important to succeed in work and life as numeracy and language skills (Dinham *et al.*, 2007: 2-4).

Eisner (2002: 30) writes about the importance of visual education to teach students to decode values and ideas embedded in popular culture. Critical analysis of popular media helps students learn how people are influenced by mass media. They learn how to read the messages of a visual text. The focus of art education on the visual world within its frame of reference assists students to become astute readers of visual images and sensitive, informed interpreters of their meaning (Eisner, 2002: 30).

Duncum (2004: 253) employs the terms multi-literacy and multimodality in an attempt to unpack contemporary visual culture. There is a new status given to the visual as a source of knowledge. Today people derive meaning from all kinds of imagery as part of their everyday experience. For art education, the study of visual imagery is concerned with the whole context of images, their production and the lived experience of those who view and interpret them.

Duncum (2004: 258) reasons that there is no avoiding the multimodal nature of dominant and emerging cultural sites. Whether it is television, the internet, magazines, video games or simulation rides, each is clearly a hybrid of communicative modes. Moreover, one does not read the language, then the pictures and then listen to the sounds; rather, one takes them in as a gestalt, a whole, all at once. This then is the challenge of multimodality in education.

3. Looking as learning

Art education provides holistic and multi-symbolic learning opportunities by which students can gain enhanced cognitive performance and become visually literate (Deans & Brown, 2008: 342). Art education is the training ground for visual thinking. Visual thinking is the ability of the mind to unite observation and reasoning in every field of learning (Pressman & Dublin, 1995: 73).

According to Eckhoff (2008: 462) visual art can be an important and rich domain of learning. Research reports highlight support for integrating rich, meaningful art viewing as a regular part of the art experience. As teachers and children communicate with each other through an art-focused dialogue, they negotiate the meanings of the artwork and of art itself.

Deasy (2008: 4) states that there are links between art and literacy in what he calls symbolic understanding. According to him, reading, writing and doing mathematics are processes of grasping and using symbols. If visual literacy is regarded as a language, then there is a need to know how to communicate using this language, which includes being alert to visual messages and reading or viewing images critically as the language of the messages. Visual literacy, like language literacy, is culturally specific although there are universal symbols or visual images that are globally understood (Stokes, 2001: 1).

Cowan and Albers (2006: 125), discuss the potential of visual arts to develop complex literacy practices. According to them semiotics is a study of sign systems in art, music, drama, written and oral language that are located in the sign maker's environment and experiences. The more experience and understanding students have of the tools, techniques and language of a sign system, the better they are able to utilise them to make meaning. Literacy is attained when learners can interpret semiotic systems with ease (Cowan & Albers, 2006: 125).

Two major approaches have been suggested for developing visual literacy skills. The first is to help learners read or decode visual images by practising techniques for the analysis of the visual. Decoding involves interpreting and creating meaning from visual stimuli. The second approach is to help learners write or encode visuals as a tool for communication (Heinich *et al.*, 1999: 64). When students consider art elements such as composition, shape and form, line, colour, texture and perspective and describe it orally or in writing, words are combined with images, which can lead to literacy and language development and the mastery of oral and written communication (Sroufe, 2004: 10).

In the following section, the literature on metacognitive strategies for reading will be examined.

4. Metacognitive reading strategies

The emergence of the metacognitive theory in the 1970s led to the belief of reading as an interactive process (Pressley, 2006: 60). Pressley did an overview of different studies on comprehension and concluded that if the thinking strategies used by proficient readers are taught to struggling readers, the struggling reader would be able to learn to think in the same way the proficient reader does and therefore learn to read with sufficient comprehension (Pressley 2006: 303).

Snow (2002: xiii) defines reading comprehension as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. Traditional definitions of reading comprehension often focus on successful decoding and the ability to answer questions after reading (Zimmermann & Hutchins, 2003: 7). However, research has proved over time that although successful decoding is essential for a good reader, reading comprehension is much more than just that (Pressley 2006: 321; Zimmermann & Hutchins, 2003: 5). These researchers claim that the thinking processes of the reader, the learning that takes place, the mastering of new information, the expansion of knowledge and the subtle connection with the thoughts of the unknown all play an important role.

5. Metacognitive reading strategies of visual symbols and images

It is useful to refer to reading to help illuminate what is required in visual arts instruction that would help build visual literacy. For example, we still need to understand the long period comparable to ‘reading readiness’ that predates skilful construction of meaning from images. Reading levels, according to Yenawine (1997: 3) are understood as “gradual and slowly evolving, allowing for large and small developmental changes in skills, understanding, and involvement. Visual literacy should be seen as a similarly slow-developing set of skills and understandings that progress unevenly, each step building on earlier ones, each dependent on certain kinds of exposure and instruction”.

The metacognitive strategies that were suggested by Block, Gambrell and Pressley (2002: 22) combined with those of Duke and Pearson (2002: 1) for reading comprehension were considered as useful for the study. The transferable strategies were adjusted for the reading of visual images as it emerges in visual literacy lessons. Adaptations are indicated in brackets in table 1.

Table 1: Metacognitive strategies regarded as applicable to art analysis

Strategy	Description
<i>Activating prior knowledge</i>	Think of prior knowledge regarding the subject, author, and genre and text structure (portrayed images).
<i>Monitor comprehension</i>	Awareness of comprehension. Conscious activation strategies empowering the reader (observer) to infer meaning from the context, words or phrases (images and art elements).
<i>Questioning</i>	Ask questions about the text (artwork) and the author’s (artist’s) intent.
<i>Drawing inferences</i>	Connect ideas in the text (artwork) with personal experiences, knowledge of other text (artworks) and/or general knowledge and drawing inferences to construct meaning.
<i>Connecting</i>	Connect ideas in the text (artwork) with personal experiences, and prior knowledge to construct meaning.
<i>Summarising and drawing inferences</i>	Identify the main ideas in a text (artwork).
<i>Synthesising</i>	Look at the features, unique information, and order of detail as well as conclusions in informative texts (images) to be able to construct a complete picture and combine it as a whole to enhance comprehension.

6. Explanatory scaffolding introduction

Pressley (2006: 513) states that there are a number of well-researched methods to enhance reading comprehension. Explanatory scaffolding introduction as a method was used in

conjunction with the adapted metacognitive strategies in table 1. The following components are essential for this form of instruction:

- A comprehensive explanation of the focus strategy and an explanation of how to use it
- Modelling of the focus strategy by the teacher
- Instructional scaffolding where students practise the use of the strategy with help and guidance from the teacher
- Gradual withdrawal of the teacher as the student becomes more and more confident in the use of the strategy
- Independent strategy use where students use the focus strategy on their own in a variety of contexts

This instruction model supports the development of self-regulated readers who can actively use strategies to construct meaning from a text (artwork) in a variety of contexts with the goal of teaching students to take over their own reading and thinking (Pressley, 2006: 320).

7. Theoretical framework

The theory that forms the framework for this article is based on what Cowan and Albers (2006: 130) formulate as social semiotics. Social semiotics is employed to produce shared meaning or a common theme from resources such as visual images, forms, symbols and texts. Visual art poses the potential to develop complex literacy practices in which thinking through multiple sign systems is necessary to read and produce a complex semiotic system or text (Cowan & Albers, 2006: 130).

The premise of our argument is that students can be instructed to 'read' the sign systems and images that are portrayed in artwork and decipher how the art elements shape and form, line, colour, texture and perspective are employed in the composition. Looking at and identifying the art elements is the recognised departure for analysis of art (Sroufe, 2004: 10). The implementation of metacognitive reading strategies as developed by Block, Gambrell and Pressley (2002: 22) combined with explanatory scaffolding introduction by Duke and Pearson (2002: 1) can be adapted to enable analysis and comprehension of contemporary art. Such 'reading' of visual imagery can enhance visual literacy levels of students who were not previously faced with the challenge of art appreciation and analysis. Students can then experience learning through multiple sign systems (Cowan & Albers 2006: 130). By verbalising and writing about their observations of art, students can read, write and create interesting texts because they have perceived their world in new ways. This exercise will lead to academic depth in their learning, observation, interpreting and writing skills.

The model developed for this study combined traditional analysis of art, thinking through sign systems and the implementation of metacognitive comprehension strategies while analysing the imagery portrayed in the art of Penny Siopis. It provided an enriching experience, which led to critical thinking and deep engagement with the learning material.

8. Research design

In order to develop their visual literacy, a model was designed to determine if second year Bachelor of Education students, who enrolled for the art education elective, were able to appreciate and interpret work by contemporary artists using the metacognitive reading

strategies that are set out in table 1. An explanatory scaffolding introduction such as is set out by Pressley (2006: 320) supplemented these. Following this exercise, they were required to analyse and describe their observations of the work in text. This study aimed to determine if the adaptation of metacognitive reading strategies to the 'reading' of visual images and symbols could contribute to the improvement of the visual literacy of undergraduate students.

8.1 Sampling for the study

Participants were Bachelor of Education students enrolled for art in education 2. All of the eighty-three registered Bachelor of Education 2 students had the option of participating in the research. Fourteen students came forward as willing participants once the research project was explained to them. These students were given the name of contemporary South African artist Penny Siopis but each received a different work of the artist, randomly drawn from the list of possible works. They were asked at the beginning if they were prepared to attend three sessions where the application of metacognitive reading strategies in the reading of visual imagery would be explained and modelled. A reading specialist presented the sessions dealing with the metacognitive reading comprehension strategies and the meeting time was arranged to fit in with the students' study programme. Two sessions followed this, during which time the metacognitive reading strategies as set out in table 1 above, were followed and applied to an example work by Penny Siopis.

The experimental group were willing participants in the research and it was clarified that non-participants would not be put at a disadvantage. During the first session, each student signed a form giving consent for their results to be used in the research and they stated that they were willing participants and understood that their anonymity would be preserved throughout the study and that they could withdraw from the study at any point in time. Permission to conduct the study was obtained from the ethics committee of the university. The artist, Professor Penny Siopis, gave written consent for photographs of her work to be used as part of the research and in research publications.

After the metacognitive reading strategy sessions ended, the students were required to apply the strategies in their analysis of the work of Penny Siopis as set out in the section on effective comprehension strategy instruction. All the assignments had to be submitted via the Learner Management System, *Myclassroom* and were assessed by the art lecturer using a rubric.

The home language of the students in this study is Afrikaans and most of the literature is only available in English, therefore, it is important for them to be able to read the visual images and symbols with clarifications in text as only supplementary. Many students have had no background in art education until their first year of their Bachelor of Education. In the past, their results for the visual literacy assignment on contemporary South African art proved that there is a shortfall in their knowledge about the art and artists of their own country and the rest of the world. Coupled with this lack is an incapability to read and interpret the visual language in images and artwork. This leads to deficiencies in visual literacy and as such missed opportunities to deepen literacy and broaden knowledge acquisition. To address this, a visual literacy assignment on contemporary South African art is set in the second year. The purpose of the assignment is to improve their visual literacy skills by increasing their ability to analyse and describe contemporary art and hopefully inspire them to improve their

knowledge and insight into the appreciation of art. The assignment forms part of the students' assessments for their semester mark.

The instrument that was initially used was a compulsory visual literacy research assignment on contemporary South African art. For this assignment, each student received the name of an artist and a specific work by that particular artist, dating from the resistance era in the 1980s to recent work. They received clear and comprehensive written notes on the analysis of artwork, which summed up the recognised method of art analysis, namely:

- All information gained from the data about the work, such as title, date, media and format.
- A thorough and detailed objective description of what can be observed in the work.
- Step-by-step discussion of the elements of art applied in the work.
- Information available in the literature about the work.

The purpose and strategy of the research was explained to the entire group. A thorough, step-by-step explanatory scaffolding introduction of the assignment was done in class by the art lecturer (see image 1).

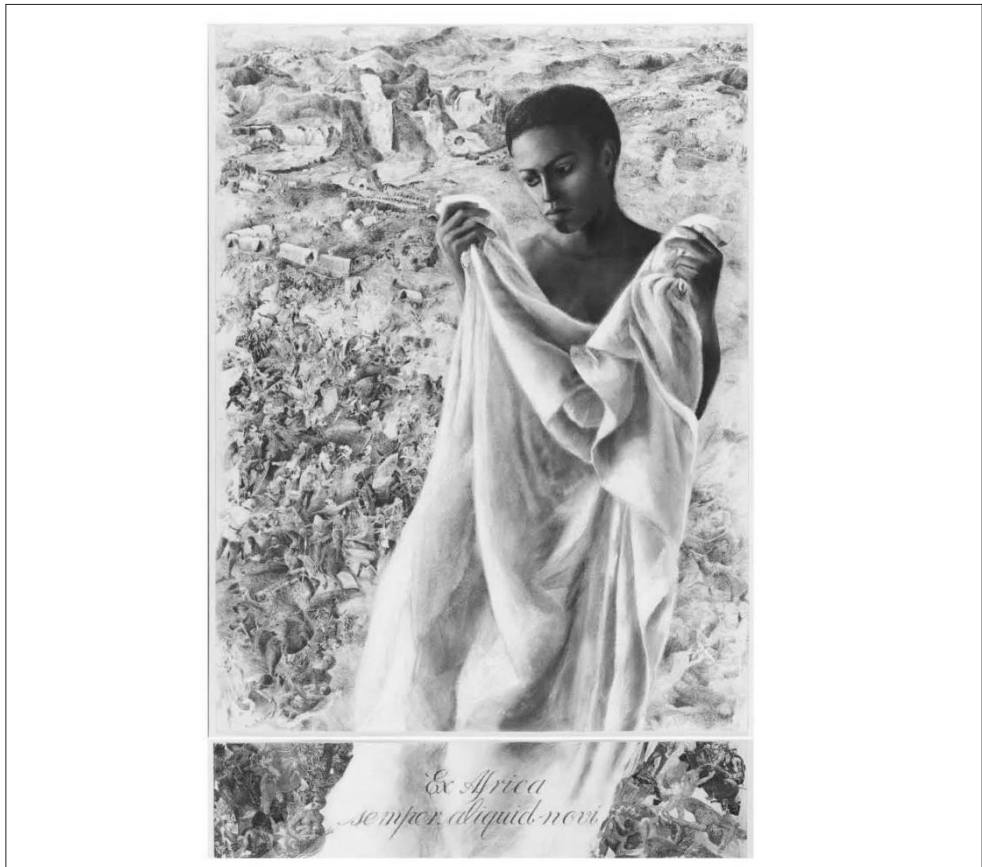


Image 1: *Ex Africa semper aliquid novi* by Penny Siopis (1990)

9. Explanatory scaffolding introduction

The first step in the introductory analysis was to try to get students to connect anything in the title of the work with their existing knowledge by means of guided questioning in order to link with the first section in table 1, namely activation of prior knowledge. A couple of students suggested that the language could be Latin as they made the link with the mottos on their school badges. After a discussion about the Latin title of the work, they realised that the artist was influenced by the colonial history of the country as a point of departure for this work. An analysis of the Latin title followed (see image 2).



Image 2: *Ex* (out of) *Africa* *semper* (always –music term for always is *sempre*) *aliquid* (derive – liquid that flows from) *novi* (novice, new).

Once the title was understood and the students noticed that the artist executed this two-dimensional work in two sections (diptych), they were guided in analysing the work in parts, starting from the bottom where the title, as part of the work, is inscribed. It became clear upon close observation that the shading in the bottom part is darker, deeper and more detailed (see image 3). The resemblance to Michelangelo's *Last Judgement* was pointed out to them. None of the students were aware of this resemblance; therefore Michelangelo's altarpiece was shown to them to indicate this and deepen their knowledge. The strong correlation with the marble friezes in the Voortrekker Monument, depicting the Great Trek and the wars along the way, was noticed and commented on only by some students, therefore their background knowledge about these friezes and the history of that time had to be refreshed. Guided questions were posed to make them aware of the links the artist had made with biblical and historical events. This was done to encourage them to read signs and symbols rooted in the history of their own country.



Image 3: Sections from the left and right flanking of the title

Gradually, moving upwards and carefully looking at the hundreds of images that the artist had drawn and collaged, using drawings from school history textbooks (see image 4), the colonial history of South Africa unfolded in stages. The second strategy in table 1 led to the drawing of inferences to construct meaning, connecting the images with existing knowledge. Once guided to look carefully, students started to notice semiotic symbols such as the mother suckling her child and the large, dominant black female figure hiding behind drapery, typical characteristics of Siopis's work of the time, which is the only feature in the work done in colour, in contrast to the grey tones of the background.



Image 4: Top left part of the work with drawings from school history textbooks

This panel from the top left part of the work is like a narrative told in visual images. The students identified images and symbols that portrayed recognisable historical scenes and events, employing the fifth metacognitive strategy, namely connecting ideas with prior knowledge.

The scaffolding exercise was given as a framework from which to work. It was set out in the assignment brief that students would be expected to conduct the analysis of the particular work that they received in much more depth and as comprehensive and detailed as possible, using rich and interesting descriptive text.

10.Data

To ensure the validity of the results by using various sources of data and to enable comparison with future experiments of this kind, both quantitative and qualitative data was collected.

10.1 Quantitative data

For the purpose of the study, the marks attained by the students of the previous year group for the same assignment were considered in order to determine whether there had been any change in the marks from one year to the next. In 2012 there were seventy-eight students enrolled for the art education course. The aggregate for the assignment in 2012 was 4.4/10. Several students did not attempt the assignment that year.

In 2013 there were eighty-four students enrolled for the course. Seventy were in the control group and fourteen in the experimental group who attended the three extra sessions where metacognitive strategies for reading were applied for the 'encoding' of visual information. The average mark for the assignment of the control group was 6.14/10 and the average of the experimental group was 6.68/10.

From this data, it is clear that the average mark of the experimental group was higher but not remarkably so. The average mark for the entire group of 2013 improved with 2.2 points compared to the marks of the 2012 group for the same assignment as is clarified in the diagram below (diagram: 1).

Possible explanations for this improvement in their marks will be discussed when all the data is considered.

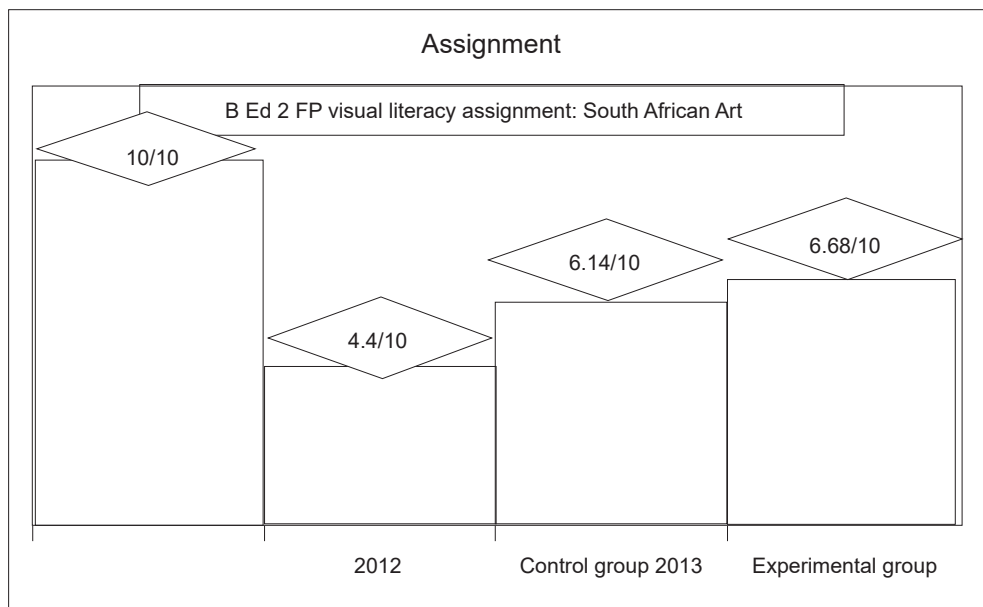


Diagram 1: Marks visual literacy assignment

10.2 Qualitative data

The assessment of the assignments was done in alphabetical order, with the work of the experimental and control groups mixed. The quality of the work of the entire group was remarkably better than that of the previous year with regard to the research aspect. Students used a greater variety of resources such as books, magazines and websites and were able to extract the necessary information for their assignment and not just rewrite the text from the books. Referencing techniques also showed an improvement from 2012 to 2013.

With regard to the analysis and appreciation of the artwork, most students described and discussed the elements they observed in each work carefully and with much more attention to finer detail than the 2012 group. However, the 2013 experimental group did not excel to a remarkable extent in this. The researcher expected a greater improvement in the reading of visual information following the sessions on metacognitive strategies that were done with the experimental group. An explanation for this is referred to in 10.2 where the qualitative data is discussed.

11. Examples of the analysis of the work of Penny Siopis by Bachelor of Education students

The student who discussed the work by Siopis done in 1989, *Piling wreckage upon wreckage*, (see image 5) prior to the introduction of metacognitive reading strategies, described the person in the painting as 'a man wearing Roman drapery'. A student, after the introduction of the reading strategies, discussed the person in the work as 'a woman of colour holding a draped sheet in front of her body'. The latter is a far more accurate description of the actual depiction of this work by Siopis (1989). The student evidently developed the skill and understanding to 'read' visual imagery and symbols through close observation of the depicted images and the art elements whilst creating interesting texts such as: "the woman is holding a large draped piece of fabric which spreads out at the bottom to reveal a host of discards such as a painting, sculptures, rope, candleholders, books, watches..." (translated).

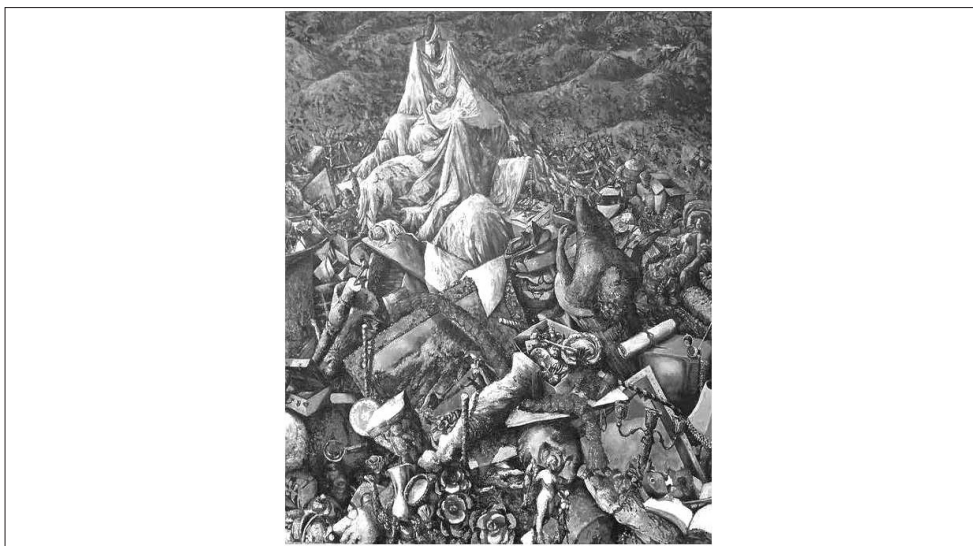


Image 5: Siopis, P. 1989. *Piling wreckage upon wreckage*

Likewise, a student who discussed *Terra Incognita* (see image 6) without instructional scaffolding, gave a stark, deprived description of the bare essentials that could be observed in this highly intricate work portraying a very large amount of objects. Whereas a student, after the introduction of the reading strategies, gave a detailed description of the woman, her stance, the colours used, the depiction of the landscape in which she was portrayed in this work – evidently keenly observed and described in a rich, elaborate language, clearly taking note of far more detail. This student also researched the literature for the meaning of the title and attempted to bring *Terra Incognita*, which translates as ‘Unknown land’, in connection with the images portrayed in the work. She wrote that the work explores “urbanisation, urban citizenry, mining activities, political violence, exploitation and social change” (translated).

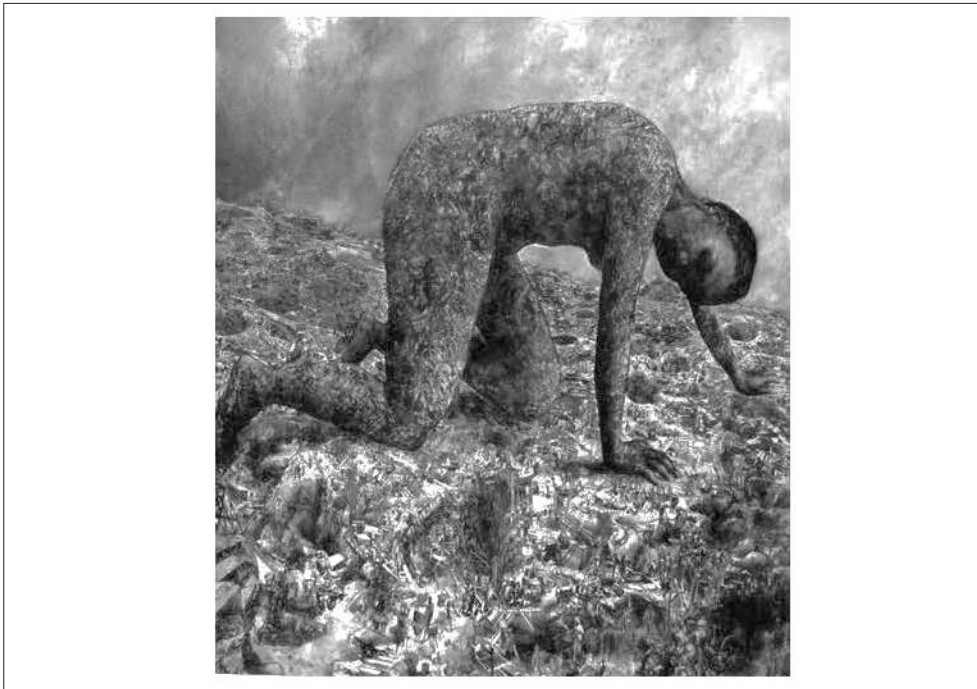


Image 6: Siopis, 1991. *Terra Incognita*

The student in the 2012 group who analysed *Dora and the other woman*, (see image 7) a complex and laden work, made no effort to pay attention to the small photographs that are pinned to the drapery. This is a recurring symbol in the work of Siopis at that time, whilst the student from the 2013 group, who was encouraged to employ the metacognitive strategies for reading comprehension to the ‘reading’ of the visual imagery, noticed that they were small drawings of Saartjie Baartman. Although she initially did not know who this person was, completely unaware of the role this woman played in South African history, the literature she consulted informed her and contributed to her comment that an artist’s work can influence the spectator’s viewpoint and change thinking patterns through the understanding of the imagery and symbols used.

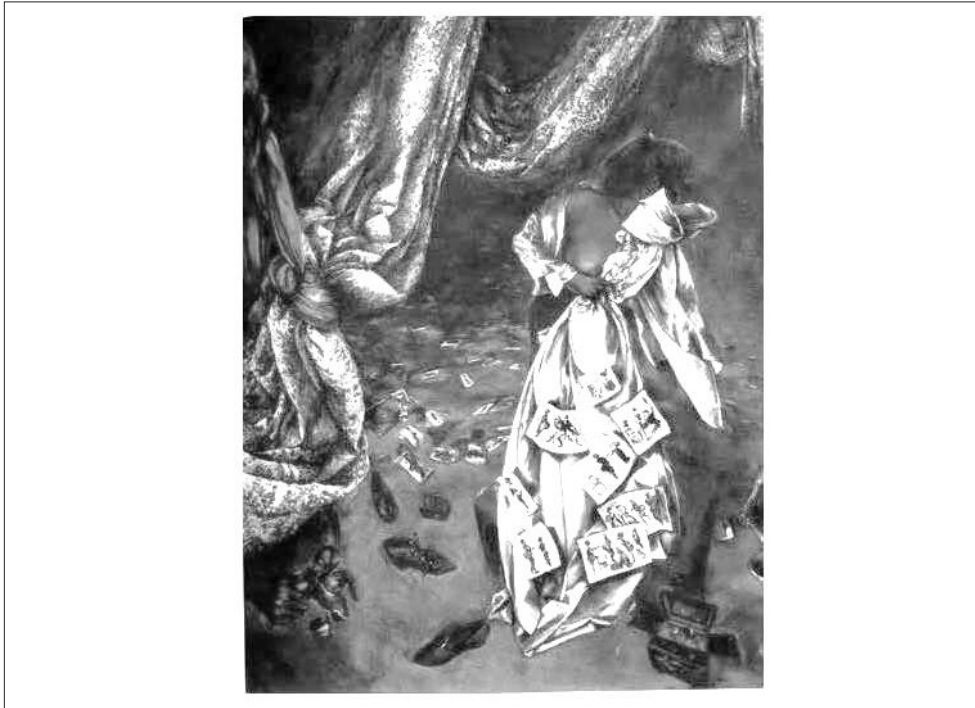


Image 7: Siopis, 1998. *Dora and the other woman*

None of the all-female 2012 group of students were able to articulate the strong feminist statements made by Siopis's work, whilst some comments made by students from the 2013 experimental group, especially those who have analysed work from the *Shame* series, (see image 8) hinted at the fact that the work touched the heart and stirred emotions. The impact of vulnerability, pain and trauma on females as victims of abuse were noticed and described by the student who observed selected images presented as small but very discomfoting works that form part of this series. These unmentionable topics were quoted from the literature consulted, not as coming from their own observation. It can be assumed that the Calvinist upbringing and conservative outlook of most of these students prohibited open discussion of topics so uncomfortable, so emotive.



Image 8: Siopis, 2004. From the *Shame* series

12. Findings

12.1 Quantitative data

The marks students attained for the assignment showed an improvement from 2012 to 2013. In 2013, all the students posted an attempt, compared to 2012 when eight students did not attempt the assignment. This could be attributed to the fact that the students who were then in their second year (2013) had been doing metacognitive strategies for reading since their first year and the 2012 group had not. The marks of the 2013 experimental group who attended the application of reading strategies sessions were 2.2 marks higher than the control group. This evidence suggests that the strategies used in the experiment could directly influence visual literacy levels. A study with a larger sample or with a longer duration would be useful in testing this initial finding.

12.2 Qualitative data

With regard to the qualitative data, various reasons for the improvement of the results can be deduced. The improvement in the marks could be ascribed to a general improvement in the research culture at the faculty, as more attention is given by lecturers to research methodology and a raise in the level of academic standard had been aimed for and gradually achieved.

The fact that the researcher/art lecturer paid much more attention to the presentation and explanation of the assignment, did an example of art appreciation and used all the available strategies to assist students to manage this assignment, also contributed to the general improvement in the marks of the entire group. This clarification of the assignment as set out in 8.1, namely the explanatory scaffolding introduction could be a contributing factor to the improvement in the marks of the 2013 group. Furthermore, the fact that all the students were aware that the assignment and their results might be used for research purposes could have motivated them to perform better and put in more effort into their work for this assignment. Although the implementation of metacognitive strategies for reading could not improve their poor command of English, it proved to be effective for their literature reviews and citations as most students managed to supplement their own analysis of the work with what was written in the literature about the works they discussed.

The students in the experimental group used a richer, more elaborate and eloquent vocabulary when discussing the elements and symbols that they noticed in the art. Most enlightening about this study is the evidence from the data that in their analysis, when they implemented metacognitive comprehension of the work, students were far more capable of paying attention to the images portrayed and really noticed the art elements and symbols in a composition. It was like an adventure of discovery and detection. The 'reading' of visual imagery enhanced the visual literacy levels of students with no former knowledge of art appreciation and analysis.

A learning experience through multiple sign systems enables students to perceive their world in new ways, solve problems, read and write about the work and create interesting texts (Cowan, 2006: 130). This confirms that the implementation of metacognitive strategies can be an advantage and is valuable in the analysis and appreciation of art.

13. Conclusion

The implementation of metacognitive strategies for reading comprehension can be adapted to assist students in the appreciation and analysis of art. This experiment provided what Yenawine (1997: 3) refers to as instruction in visual literacy akin to reading processes in stages, securing the ability in students to come to grips with complex images. The use of metacognitive strategies in art appreciation created an equivalent for reading comprehension. In this study, the improved reading comprehension also enhanced their literature study and vice versa, which contributed to an improvement in the marks the students attained for the assignment.

Visual literacy instruction in combination with metacognitive strategies for reading seems to have enabled students to 'read' or view images as the language of the visual and to communicate visual messages verbally. Guided instruction to 'read' the sign systems and images, the art elements in a composition, shape and form, line, colour, texture and perspective with the implementation of metacognitive comprehension strategies, led to an increase in the visual literacy levels of students who previously had not encountered art appreciation and analysis. The process of analysis of the visual elements, combined with what is written about the works, broadened their vision and opened up artwork as a source to deepen knowledge.

By means of this project, Bachelor of Education students developed visual literacy skills by 'reading', interpreting and decoding visual images. Students explored the potential of visual art in developing literacy practices by encoding the metaphorical imagery depicted in contemporary art and describing it in text. Furthermore, guided by the theory of social semiotics, students were assisted to encode visual images as a tool for communication. The visual literacy levels of students in a generalist training programme can be increased by means of the implementation of a model based on the theory of social semiotics combined with adapted metacognitive strategies for reading. Continued exploration of projects of this kind will contribute to academic depth and rigour due to the heightened perception and improved visual reading skills of generalist trained students.

References

- Block, C., Gambrell, L. & Pressley, M. (Eds.). 2002. *Improving comprehension instruction: Rethinking research, theory and classroom practice*. San Francisco, CA: Jossey-Bass Publishers.
- Burmark, L. 2002. *Visual literacy*. Available at <http://www.tcpd.org/Burmark> and Schort Media Inc. [Accessed 21 February 2012].
- Department of Education (DoE) 2011. *Curriculum and Assessment Policy Statement*. Available at www.education.gov.za [Accessed 28 November 2011].
- Cowan, K. & Albers, P. 2006. Semiotic representations: Building complex literacy practices through the arts. *The Reading Teacher*, 60(2), 124-137. <http://dx.doi.org/10.1598/RT.60.2.3>
- Deans, J. & Brown, R. 2008. Reflection, renewal and relationship building: An ongoing journey in early childhood arts education. *Contemporary Issues in Early Childhood*, 9(4), 339-353. <http://dx.doi.org/10.2304/ciec.2008.9.4.339>
- Deasy, R.J. 2008. Why the arts deserve center stage. *The School Administrator*, 1-6.

- Dinham, J., Wright, P., Pascoe, R., MacCallum, J. & Grushka, J. 2007. Proving or improving visual education: Implications for teacher education. *Paper presented at the AARE Conference*.
- Duncum, P. 2004. The theories and practices of visual culture in art education. *Arts Education Policy Review*, 105(2), 19-24. <http://dx.doi.org/10.1080/10632910309603458>
- Duke, N.K. & Pearson, P.D. 2002. Effective practices for developing reading comprehension. What research has to say about reading. *Scholastic Red*, 1-27.
- Eckhoff, A. 2008. The importance of art viewing experiences in early childhood visual arts: The exploration of a master art teacher's strategies for meaningful early arts experiences. *Early Childhood Education*, 35, 463-472. <http://dx.doi.org/10.1007/s10643-007-0216-1>
- Eisner, E.W. 2002. *The arts and the creation of mind*. USA: Yale University Press.
- Heinich, R., Molenda, M., Russell, J.D. & Smaldino, S.E. 1999. *Instructional media and technologies for learning*, 6th edition. Upper Saddle River, NJ: Prentice-Hall.
- Pressman, H. & Dublin, P. (Ed.). 1995. *Accommodating learning style differences in elementary classrooms*. USA: Harcourt.
- Pressley, M. 2006. *Reading instruction that works. The case for balanced teaching*. New York, NY: Guilford.
- Sroufe, G.E. (chair) 2004. The arts and education: New opportunities for research. *Arts Education Partnership*, 1-38.
- Snow, C. 2002. *Reading for understanding*. Santa Monica, CA: RAND Education.
- Stokes, S. 2001. Visual literacy in teaching and learning: A literature perspective. *Electronic Journal for the Integration of Technology into Education*, 1(1), 10-19.
- Wright, S.K. 2003. *The arts young children and learning*. Boston: Allyn and Bacon.
- Yenawine, P. 1997. Thoughts on visual literacy. *Visual Understanding in Education*, 1-2.
- Zimmerman, L. & Smit, B. 2014. Profiling classroom reading comprehension development practices from the PIRLS 2006 in South Africa. *South African Journal of Education*, 34(3), 1-9. <http://dx.doi.org/10.15700/201409161101>
- Zimmermann, S. & Hutchins, C. 2003. *Seven keys to comprehension*. USA: Harmony.