

VIDEO-RECORDED LESSON ANALYSIS AS REPLACEMENT FOR MICRO-LESSONS IN A LEARNING AREA METHODOLOGY MODULE

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Learning Area Methodology 2A as part of the BEd programme requires that each student should do a micro-lesson. However, due to the large number of students (150+) in Natural Sciences this is very time-consuming because it takes 20 minutes per student. The purpose of this paper is to report on the experiences of students when they had to analyse video-recorded lessons instead of presenting individual micro-lessons. The research questions were:

- What are students' experiences of the value of analysing video-recorded lessons?
- How should the analysis of video-recorded lessons be facilitated if it becomes a feasible replacement for micro-lesson presentations?

Video-recorded lessons were analysed by each student by using rubrics and the students had to reflect on their experience. An overwhelming 93.6% of the students found this activity to be very effective. One student wrote: "It was a good experience I think I learned more from this activity than I would have learned through micro-lessons". The value of effective lesson planning, the attention focusing phase and time management were realised.

Keywords: Micro-lessons, video-recorded lessons, lesson planning.

1.1 Introduction

The BEd (Senior Phase) is a four-year degree programme with the purpose of equipping students with knowledge, skills, attitudes and values to enable them to specialise as learning area specialists in in the Senior Phase (Grade 7, 8, and 9). One of the core modules in the second year of study is a Learning Area Methodology in the student's area of specialisation while School Experience 2 serves as an elective module.

It is required from our second year students to *learn in practice* which involves teaching in authentic and simulated classroom environments. Micro-lessons are a form of learning in practice and are seen as an effective tool in preparing students for the school-based teaching and learning environment. Micro-lessons develop teaching effectiveness in a situation in which mistakes and uncertainties can be addressed. These micro-lessons are compulsory and in may take the following form: a student or group of students presents a lesson to a small group of peers (pre-service teachers) and in the presence of one or more lecturers. Peers and the lecturers

provide feedback to students so that s/he may develop her/his teaching skills. The feedback is based on the assessment criteria provided by the methodology lecturer/s.

It is expected that each micro-lesson presentation should be a minimum of 10 minutes and a reflection and discussion should follow. The general criteria for the micro-lessons are introduction, conclusion and a brief summary of the rest of the lesson. Each micro-lesson presentation can therefore take up to 20 minutes, or even longer, depending on the feedback and discussion.

Although only two students were registered for Learning Area Methodology 2A: Natural Sciences in 2011, this number increased to 154 students in 2012. All these students were in one class and I saw them once per week for a session of 100 minutes. The implication was that for me to assess the individual micro-lessons of all these students would take more than 50 hours if we could have venues available during time slots which would fit in with all our lecturing/class time tables. Although we have the option of 'bringing in' a consultative teacher to assist with all the assessment, we have found that this option looks good on paper but in reality it is not an option due to the fact that practicing teachers do not have the time available to assist us during normal class hours. According to Floden (2006, p. 25), as a practitioner I need a concrete solution to the immediate practical problem that I face. This solution must work in my specific context.

After a brainstorming sessions with more senior colleagues we have decided to explore the use of pre-recorded lesson presentations at schools for my students to analyse and assess during a normal contact session. The idea was that the analysis and assessment of video-recorded lessons would replace the normal practice of individual micro-lesson presentations. Not only would this solve the problem of resources (time and venues) but we thought that this practice could be a solution to the challenge of the increasing number of students registering for Learning Area Methodology 2A: Natural Sciences.

The research questions for this investigation were:

- What are students' experiences of the value of analysing video-recorded lessons?
- How should the analysis of video-recorded lessons be facilitated if it becomes a feasible replacement for micro-lesson presentations?

Therefore, the objectives would be to analyse the students' reflections which will be guided by two questions and to incorporate these findings into our planning for the future.

1.2 Theoretical framework and context

De Beer and Gravett (2010, pp. 80/81) identifies six questions which students may use to guide them when they need to plan a lesson for teaching in schools. These questions are:

- Who are the participants in the lessons?
- What should the learners be able to do (what are the outcomes)?
- When will the lesson be presented?
- Where will the learning take place?
- What is the content of the lesson?
- How will the lesson be structured?

The above are explained to the BEd students during their first year module 'Introduction to the South African school curriculum'. During their second year of study the students are divided into their choice of specialisation areas and in these smaller groups they are focusing then on the specific learning area they are planning to teach after they have successfully finished their qualification.

The main focus of the learning area methodology in their second year is designing and implementing a lesson plan. Kiviet and Du Toit (2010, p. 52) remind us that systematic planning and presentation of the lesson is the major task of any Natural Sciences teacher. To be able to do plan a good lesson one has to formulate the lesson outcomes and then select appropriate instructional approaches, learning support materials and assessment procedures. The different phases of lesson planning and presentation are the pre-interactive phase which includes a situational analysis and the actual drawing up of the lesson plan (Kiviet & Du Toit, 2010, pp. 55/56). The interactive phase of the lesson includes the invitation phase where the prior knowledge of the learners should be tested and it should also be used to focus the attention of the learners (De Beer & Gravett, 2010, pp. 85/86). Furthermore, this phase also include the actual facilitation of learning, the contextualisation, questioning and assessment (Kiviet & Du Toit, 2010, p. 57). De Beer and Gravett (2010, pp. 86/87) call this engaging with the new content and summary and integration. Thereafter, the post-interactive phase follows which is a form of self-assessment by the teacher (Kiviet & Du Toit, 2010, p. 58) where they reflect critically on the completed lesson to determine if it was a success. Nyaumwe and Mtetwa (2011, p. 146) refer to reflection-on-action (or post-lesson reflection) which involves careful analyses of what happened, why it happened, and what they could do differently to improve their teaching performance and learner understanding.

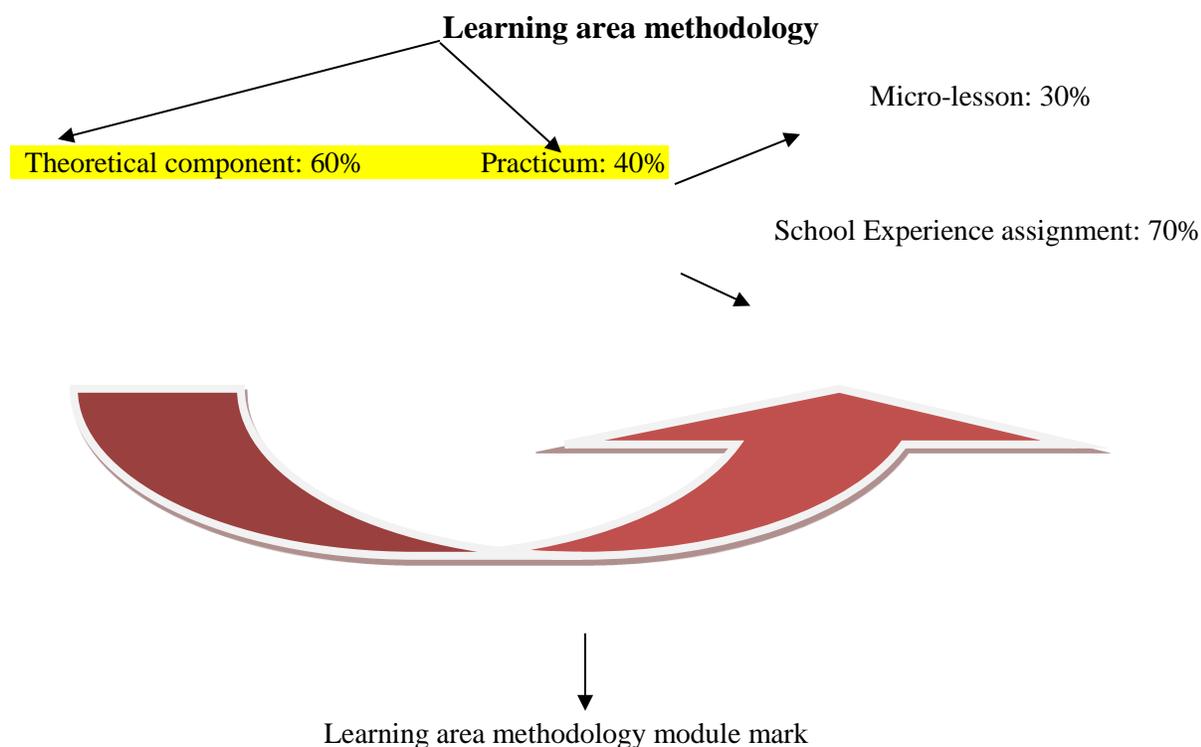
Following from the integration of the ideas of the authors mentioned in the previous paragraphs in this section of the study, the following template is available to the students to design their lessons (see Figure 1).

Figure 1: Lesson design template

Teacher:	Grade:	Date:	
Learning Area:			
Topic:			
Who? (Situation Analysis)			
What for? (Lesson Outcomes/ Specific Aims)			
When? (Situation analysis – Time related)			
Where? (Situation analysis – Location and facilities related)			
What? (Lesson Content and NCS/ CAPS requirements)			
Specific Aims (see CAPS)			
Lesson outcomes (Use ACTION VERBS. Consider the cognitive, affective and psychomotor domains)			
Knowledge	Skills	Values and attitudes	
Lesson Content and Potential Questions			
How? (Activities, media and methods)			
The invitation (Attention Focusing)			
Teacher Activities	Learner Activities	Media	Time
Engaging with new content			
Teacher Activities	Learner Activities	Media	Time
Summary and Integration			
Teacher Activities	Learner Activities	Media	Time
Reflection on Lesson			

Over and above the lesson design template the students also have to work according to the weighting of all the assessment opportunities towards their final mark for the module. The following figure explains the weighting for learning area methodologies in the faculty.

Figure 2: Weighting for learning area methodologies



From Figure 2 it follows that the theoretical component (test, etc.) makes up 60% and the practicum makes up 40% of the module mark. The practicum component is further broken down with micro-lesson making up 30% of the practicum mark and the school experience assignment making up 70%. Finally, the module mark will then contribute 50% and the exam 50% to give the final mark. This means that the mark for the micro-lesson only contribute 6% towards the final mark for the learning area methodology.

When I carefully considered the 154 students in my Learning Area Methodology 2A: Natural Sciences class, the minimum of 20 minutes per student to present a micro-lesson, the small contribution (6%) to the student's final mark for the module, the lack of availability of venues and time slots on the over-burdened time table, I have decided to rather explore the use of pre-recorded lesson presentations at school for my

students to analyse and assess during a normal class session. The students' feedback on their experiences can then eventually be used to decide if the analyses of pre-recorded videos can be a feasible replacement for individual micro-lessons presentations.

1.3 Methodology

Two video-recorded lesson presentations were used for the students to analyse and assess during the normal 100 minute contact session. No sampling was done because all the students registered for the module had to participate in this assessment opportunity.

Various assessment criteria were considered when we chose the specified video-recorded lessons. These assessment criteria included critical questions regarding the lesson presentation phases, the utilisation of media, professionalism, creativity and time management. We have gained informed consent from everybody involved when the lesson presentations were recorded (Mason, 2002, p. 118) and they were informed about the purpose of the recordings and what it will be used for (Ritchie & Lewis, 2003, pp. 66/67). One of the recordings was of a well-experienced practising Natural Sciences teacher presenting a lesson on the atmosphere to grade 9 learners and the other recording was made when one of our previous students presented a lesson on the differences between plant and animal cells to grade 9 learners during her work integrated learning (school practicum) the previous year.

The previous week the students had a 'practice round' of how to analyse and assess a pre-recorded lesson presentation. Each student used a pre-designed rubric to assess the lesson with the guidance of the lecturer involved. The same rubric was used for the analyses and assessment of the two video-recorded lessons the following week.

The rubric that was used to analyse and assess the video-recorded lessons is presented in Figure 3.

Figure 3: Rubric for analysing and assessing a video-recorded lesson

Rating code	Description of achievement
7	Outstanding
6	Meritorious
5	Substantial
4	Adequate
3	Moderate
2	Elementary
1	Not achieved

	1	2	3	4	5	6	7
Assessment of lesson presentation phases							
Does the teacher show evidence of understanding the importance of the attention focusing phase/ introduction? Is the introduction effective?							
Is the teaching method used appropriate, and conducive to learner understanding?							
Does the teacher explain the new content well, or does the teaching method allow for good conceptual understanding? Is the content made relevant to the learners?							
Is there effective communication between teacher and learners?							
Does the teacher also consider the incorporation of higher-order intellectual skills, and the							

psychomotor- and affective domains?							
Is the summary/ assessment phase well presented?							
Is the teacher well prepared for the lesson, and does he/she clearly know the content? (Were any factual mistakes made?)							
Were learners actively involved in the lesson (learner-centredness)							
Is the questioning episodes well planned? Does the teacher involve all learners? Does the teacher provide feedback on learners' answers?							
Does the teacher take cognizance of the Nature of Science? Would this lesson stimulate interest in the natural sciences?							
Does the teacher ensure that the content was understood? Is there effective assessment consolidation?							
Assessment of media							
Is the use of media effective? Does it assist in the learning process?							
Professionalism							
Did the teacher act professionally? (Was he/she well-prepared, dressed appropriately, respected the learners, showed self-confidence)							
Creativity							
Does the teacher provide evidence of creativity in the lesson?							
Time							
Did the teacher keep to the time limit?	No	Yes					

TOTAL: 100

_____ %

The two rubrics, one for the atmosphere and another one for the plant and animal cells lessons, completed by each student were collected and assessed by myself in comparison to rubrics completed by two lecturers. The marks obtained by each student were recorded on the mark sheet for the module. More detail about this action will not be presented here because these results were not part of this study.

During the following session we have asked the students to reflect on their experiences of the value of analysing and assessing the video-recorded lessons. By introducing this element of qualitative data, the design has elements of qualitative and quantitative data, therefore, the design might be considered as a mixed method.

This paper will only focus on the mentioned reflections of the students. These reflections were guided by the following question:

How did you experience the activity where you had to analyse and assess a video-recorded lesson of respectively a UJ student and a practising teacher? (Give a comprehensive account of your thoughts.)

The reflections by the students were collected and worked through by hand looking for themes which could be identified. More detail about these themes will be presented in the next section. It is worthwhile to note at this stage that the idea was not to make a comparative analysis of the

video lesson and the conventional micro-lesson presentations and therefore we would not judge if the one is more effective than the other. The focus was on the experiences of the value of the activity for the students.

1.4 Findings

An overwhelming 93.6% of the students indicated that they have experienced the activity as positive. After working through these documents the following 12 themes were identified: concept/s describing the experience; improving my lesson; opportunity to reflect on own lesson; ideas how to handle situations; lesson planning and creativity; video-recorded lessons better than micro-lessons; value of real life experiences; content knowledge not guarantee of good teaching; learn about mistakes; importance of introduction and prior knowledge; prepare me for own assessment and shoestring approach. Some of the most valuable responses are quoted verbatim.

Theme 1: Concept/s describing the experience

Some of the concepts used by many of the students to describe their experience of the activity are:

different, exciting, wonderful, very eye opening, enlightening, valuable, challenging, beneficial, informative, great opportunity and learning experience

One of the students could verbalise the experience very concisely as follows: “It was a different and exciting learning experience it would be much nicer if we could be taught in a similar way next year. It helps us to identify our errors and become more professional.”

Theme 2: Improving my lesson

Many of the responses of the students could be related to this identified theme and some of the responses were:

I learned how to improve my lessons.

I have realised my weaknesses and strengths – I am willing to modify my teaching pedagogies in order not to continue making the same mistakes.

I learned what to do and what not to do.

Unfortunately these responses did not indicate exactly what it is that they have learned to do or what not to do. Therefore, the possibilities are just too wide to comment on.

Theme 3: Opportunity to reflect on own lesson

The following is an exact quote of one of the student’s reflections.

“I think it was a good experience I think I learned more from this activity that I would’ve learned through micro lessons. It gave me a chance to reflect on the lesson I presented during school experience.”

A substantial number of the students responded in similar ideas related to the opportunity to reflect on their own lessons which they have to present at schools during their work integrated learning at schools during the first week in September.

Theme 4: Ideas how to handle situations

The following reflections encapsulate the main ideas of many students:

Watching the video not only gave us a lot of great ideas but showed me how to handle certain situations.

It was interesting to see how mistakes can be made easily and also how quickly to lose your learners' attention.

I now understand that learners are divers (sic) and that you have to accommodate all.

The above can be related to the situational analysis which forms part of the pre-interactive phase of the lesson (Kiviet & Du Toit, 2010, pp. 55/56). The learning context should be taken into account when planning a lesson. This include the ways of accommodating learners with different learning styles, the most appropriate and suitable teaching approaches and methodology for the particular lesson and also how to focus the attention of the learners or to 'invite' learner interest and attention (De Beer & Gravett, 2010, p.86). Botha and Reddy (2011, p. 258) indicate that teachers will have to display differentiated and integrated knowledge domains to effectively design and guide learning experiences for the needs of diverse groups of learners.

Theme 5: Lesson planning and creativity

Some of the ideas of the students can be represented by the following responses:

Gives insight in what happens in a classroom environment and what to expect.

I have learned how to create a creative classroom.

It gives insight on how to approach a lesson.

I learned that I should be creative and think outside the box.

Strauss and Jacobs (2010, p. 114) indicate that creativity can be described as a combination of flexibility, originality and sensitivity to ideas that enable the thinker to break away from usual thought patterns into different and productive thought sequences. Therefore, to promote creativity in the learners the teacher needs to know the learners and encourage their original ideas.

Theme 6: Video-recorded lessons better than micro-lessons

The majority of the students have indicated that they have experienced this activity as better than the presentation of a micro-lesson. The following are some of the many ideas presented by them:

I think DVD lesson was much better compare to micro-lesson simply because DVD lesson it where (sic) we as student (sic) to distinguish between good and bad lessons.

I have learned to apply other methods and try new strategies.

Visual example is better than just hearing what should be done.

I have realised that learning and teaching are embedded in both teacher and learner.

I learned that there are different approaches of teaching.

It gives me insight about strengths and weaknesses teachers may have.

We as lecturers sometimes forget that even our university students have different learning styles. We need to make learning more relevant and effective by accommodating our visual and kinaesthetic learners more (Kiviet & Du Toit, 2010, pp. 50/51). By analysing the two pre-recorded lessons many students realise how important the attention focusing phase is and how successful the student teacher was with her shoestring approach (Onwu, Botha, De Beer, Dlamini & Mamiala, 2010, p. 204) in her class by improvising and developing her own material for a science lesson.

Theme 7: Value of real life experiences

Some of the responses which lead to the identification of this theme were:

I found the activity stimulating. It was different from the past activities we had to do. I felt for the first time that we are being prepared for the real life I (sic) that we will come across in schools.

We receive tips for what to do and what not to do.

Any event planned and unplanned may occur without the teacher being aware of how to tackle it.

One is able to see the things we learn on paper applied in reality.

It makes teaching practical in the lecture halls.

Similar to the invitation phase of a lesson, my students were invited to reflect on their own experiences in relation to the learning content which was now presented by two video-recorded lessons. This was perceived as a much more stimulating experience than the normal ‘theory’ and a discussion about the application of the theory. As the one response indicates “One is able to see the things we learn on paper applied in reality.” Another student responded “It makes teaching practical in the lecture hall.” My stance on this is ‘wow’ and that we miss out on the wonderful opportunities we may have in teaching our big classes. It is about time that we ‘think out of the box’ and come up with creative ideas of how to replace the very time consuming practice of individual micro-lessons in our preparation of our future teachers. In this regard one might introduce the practice of lesson study as reported by Ono and Ferreira (2010).

Theme 8: Content knowledge not guarantee of good teaching

The following response encapsulates various other responses which tried to formulate something similar to this idea:

It showed us that knowing the content does not necessarily mean that you can teach as we saw in the Atmosphere lesson where the teacher had knowledge of the content but did not manage to reach out to the learners.

Although these students are only in their second year of studies they are able to identify the lack of focused dialogue in the one classroom. The questions that were asked by the teacher were more often than not by the teacher herself. It was obvious that the learners loose interest in the teacher-centred lesson that was presented. A list of distinguishing features of learner-centred classrooms is presented by Sanders and Nduna (2010, p. 26).

Theme 9: Learn about mistakes

The next response is typical of some students' remarks. They have referred to the fact that they learn from the mistakes by others.

I think DVD lesson was much better compare to macrolesson (sic) simply because in DVD lesson it (sic) where we as student teacher (sic) learn from DVD especially mistake (sic) and be able to know that we don't have to repeate (sic) those mistakes that are done in the DVD but in microlesson (sic) you just make you (sic) mistake and loss (sic) marks. (Please keep in mind that almost all my students do not have English as their first language.)

According to Mason (2002, p. 104) visual resources have been underexploited in social science research. Again, it seems that the video-recorded lesson analyses and assessment may be a feasible replacement for the micro-lesson approach which has been the practice for many years.

Theme 10: Importance of introduction and prior knowledge

The following are some of the responses from students regarding the importance of the introduction and the existing knowledge of the learners:

It is important to invite or to introduce the learner to the lesson.

To ask questions that will engage the learners to include their prior knowledge of the content.

To meet learners on their level of understanding.

I learned that learners do have knowledge of something before being taught.

According to De Beer and Gravett (2010, p. 86) one of the teacher's activities dealing with the invitation/ introduction phase is to help learners to 'get in touch' with their existing knowledge and to identify gaps, flaws or misconceptions in their knowledge.

Theme 11: Prepare me for own assessment

By using the rubric which is presented in Figure 3, the students now realise how important the different aspect of the criteria are and have now a hands-on experience of the application of these criteria, therefore, 'learning-by-doing' (Kiviet & Du Toit, p. 51).

It gave me insight on how I will be assessed in my final year.

Now I know the criteria of how student teachers are assessed.

Watching videos side-by-side has definitely been a positive experience.

Theme 12: Shoestring approach

The final theme that was identified is based on the following two quotes which is seen as representative of other responses:

It gave me ideas on how to successfully plan an exciting lesson using the shoe-string (sic) method.

When learners are taught enthusiastically, in spite of being under-resourced, they learn better.

This is in line of Onwu, et al. (2010, p. 204) who stated that the concept ‘under-resourced’ is both broad and subjective and different people define it differently depending on their circumstances. Hands-on learning activities can be designed because the teacher can improvise and develop their own materials for science lessons which were demonstrated by the student teacher and her lesson on the cells.

To conclude this section related to the responses by the students to their experiences of this activity, I need to add that only six students out of the 94 students (6.4%) who have submitted their responses for analysis, were negative about the activity and their advice and critique can be grouped together as follows:

Time constraint - *We did not have time to complete the lesson analysis which was not productive for us;* sound quality - *I struggled with the quality of the sound and the sound was bad;* not interesting - *Honestly it was not interesting and I was tired after the first video;* difficult to recall - *Watch video once not good (sic) – we forget;* and bad planning - *Their (sic) was enough time for micro lessons if the planning was only done better and The problem is that the people who is (sic) doing the course (sic) schedule is 'nt (sic) motivated to work, they want the easy way out.*

I have now presented some of the most important reflections of the students about their experiences of the analyses and assessment of the video-recorded lessons. Finally, I will now write the conclusion and try to answer two research questions.

1.5 Conclusion

From the lesson design template (Figure 1) it is clear that we teach the students to focus on a situational analysis, lesson outcomes, lesson content and potential questions, the attention focusing activity (including prior knowledge), how the teacher and the learners engage in various activities, media and time limits, and reflection. When this is now compared to what the students wrote about their experiences, it seems that the analyses of the recorded-video lessons made the students more alert towards how the above actually come into play in an authentic situation.

As mentioned in the abstract 93.6% of the students experienced the analyses and assessment of the video-recorded lessons as very effective. One student wrote: “It was a good experience I think I learned more from this activity that I would have learned through micro-lessons.” Although 6.4% of the students were negative about this activity, their reflected experiences indirectly indicated that they could have a time management problem, their concentration span might be limited, and their short term memory (one week) is not in line with what can be expected from a second year university student.

Therefore, the use of video-recorded lessons which can be analysed and assessed by the students is a valuable option to replace the time-consuming practice of individual micro-lessons presented by students, especially with our larger classes. As far as the facilitation of this practice is concern, depending on the available time, the support and guidance to the students, it might be a better option to use only one video-recorded lesson as was advised by some of the students.

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