

Learning Outcomes as understood by ‘Publishing Research’ facilitators at a South African university

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This article draws on a case study of six facilitators who were teaching Publishing Research in 2011 at one of the universities in South Africa. Publishing Research was offered by two campuses of this institution. This article gives these facilitators a voice and also identifies and defines the intended, implemented and attained learning outcomes for the module. The six facilitators claimed to be using the same learning outcomes in helping students to achieve the aims in the module but the results of the module tell different stories about the facilitators’ awareness and achievement of the learning outcomes. Data collection occurred through document analysis and semi-structured interviews. A priori analysis theory (Samuel, 2009) was used as a framework for the study and this produced three themes, while this article itself is framed by Bloom’s Taxonomies of learning. This article prioritises the alignment of the intended, implemented and attained learning outcomes; as well as the use of the three domains of Bloom’s Taxonomies (cognitive, skills and value / attitude) in formulating learning outcomes of the module in order to contribute positively towards the well-being of the module.

Introduction

A learning outcome is a statement of what the learner is expected to know, understand and/or be able to do at the end of a period of learning (Donnelly & Fitzmaurice, 2005, p.16). In South Africa, outcomes are divided into Critical Outcomes (CO) and Learning Outcomes (LO). COs are twelve generic statements that were generated by the South African Qualification Authority (SAQA) to guide all courses or qualifications in South Africa. If a course or qualification is not guided by at least one of the twelve COs, such a course or qualification has no value or recognition in South Africa (Government Gazette, 1998, p.8). COs are similar to aims and objectives of the modules as they are broad and specific statements of teaching intention (Fry, Ketteridge & Marshall, 2000).

Each module has its own LOs that are prescribed in the module documents. Facilitators use learning outcomes to drive their modules (Moon, 2002). According to Donnelly and Fitzmaurice (2005), learning outcomes are statements of what students are expected to know, demonstrate, understand, or be able to do at the end of a lesson. Learning outcomes are generated according to Bloom’s domains of learning, namely, Cognitive, Skills and Values / Attitude (Adam, 2006). This suggests that each learning outcome should originate from one or more levels of these domains, namely, remembering / knowledge, understanding /

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comprehension, applying, analysing, synthesising, evaluating / creating; imitation, manipulation, precision, articulation, naturalisation; receiving, responding, valuing, organising with conceptualising and characterising by value or value concept (Ferris & Aziz, 2005).

Each of these levels has action verbs that need to be combined with the objects of the verbs phrases that give the context to produce effective learning outcomes (Fry *et al.*, 2000). Adam (2006) argues that modules must have observable and measurable learning outcomes in order to achieve consistency of delivery, transparency, comparability, credibility, and clear information for students to choose and act accordingly. This suggests that all module outlines or first module documents that are given to students should have learning outcomes for the benefit of the students in terms of guideline.

Van den Akker, Bannan, Kelly, Nieveen and Plomp (2010) suggest three important elements of outcomes when one is dealing with a teaching or learning situation. The three elements consider whether outcomes were intended (but not implemented), implemented (but not attained successfully) or attained. This indicates that the intended outcomes are initial outcomes that are planned to drive modules (planned before learning processes take place), the implemented outcomes are outcomes that are implemented to drive modules (during learning processes), and the attained outcomes are outcomes that are achieved by students at the end of a module (observed or measured after learning process).

However, according to Khoza (2010), other students feel that module outcomes should be given to them towards the end of the module (as implemented or attained outcomes) because they feel that if the learning outcomes are given early (as intended outcomes) they restrict students from digging further into their module. This suggests that once they achieve outcomes, they don't continue with what they could achieve if they were not given the outcomes. As a result, students have to be given aims, objectives and learning activities in order to achieve even the highest levels of learning outcomes. Learning outcomes are then achieved through - by digging deeper in the module within the structure created by the aims and objectives provided to them.

According to Moon (2002), learning takes place if modules are driven by learning outcomes rather than objectives. Objectives are created according to facilitators' intentions rather than students' intentions. Learning takes place when modules are driven by learning outcomes because learning outcomes are observable and measurable in terms of what students are expected to know, demonstrate, understand or be able to do at the end of a lesson (Donnelly *et al.*, 2005). This suggests that facilitators need to be careful of using learning outcomes that are neither observable nor measurable as they may not promote learning. However, facilitators should decide on the appropriate time for the learning outcomes to be given to the students (before, during or after).

According to Harden (2002a), objectives were useful when education was driven by the teacher-centred approach but now that it is driven by the learner-centred approach objectives are no longer relevant but learning outcomes are. The learner-centred approach is being promoted because it brings in three important elements of learning outcomes. The three important elements of learning outcomes, as identified by Harden (2002b, p.153), are technical competences expected of facilitators ("doing the right thing"), teaching strategies with appropriate attitude, that accommodates students together with assessment strategies ("doing the thing right"), and the ongoing development of facilitators as individual and professional ("the right person doing it"). This suggests that students have to perform their

three elements that are parallel to that of facilitators (learning technical competences, learning strategies and become active students) because learning outcomes are designed to favour students more than facilitators.

However, according to Anderson and Elloumi (2004), the three approaches (teacher-centred, learner-centred & content-centred) in learning should be used according to their strengths. This indicates that none of them should be used alone. For example, if facilitators want an effective approach for presentation they should use the teacher-centred approach (behaviourism), if they want to measure any chunk of content to be given to students they should use the content-centred approach (cognitivism) and if they want contextualized learning activities they should use the learner-centred approach (constructivism).

A case study conducted by Khoza (2001), on the outcomes of a computer literacy course which was offered by UniSchool, revealed the importance of linking learning outcomes to lesson activities or assessment strategies. About forty percent of the students failed the computer literacy course because other outcomes were not observable or measurable to guide the facilitators on how to measure their students' performance objectively. Therefore, the results of this study suggest that learning outcomes should be measurable and observable (Adam, 2006).

According to Reeves, Herrington and Oliver (2004), diversity outcomes should be promoted and be integrated with assessment activities in order to have real-world relevance for students. This suggests that outcomes and assessment activities should be integrated to learning outcomes in such a way that they introduce or link students to their chosen profession that they are studying for.

Biggs (2003) believes that learning process consists of three important components that need to go hand-in-hand with one another. The components are learning outcomes, teaching approach and assessment process. As a result of the link between these three components; while facilitators assume that assessment process comes at the end of learning process, students assume that it is at the beginning of learning processes. While these three are important, Adam (2004) observes that it is not good if curriculum is assessment-driven with learning outcomes that are too confined. This situation confuses facilitators and students, especially if proper guidelines for designing learning outcomes were not followed to link assessment process to the learning outcomes. Adam (2004) further states that learning outcomes should focus on higher order thinking and application skills because if they are written within a narrow framework, they may limit learning and result in a lack of intellectual challenges to students.

Therefore, the results of the above discussion suggest that learning outcomes need to drive modules; they need to be observable and measurable; need to be designed within proper guidelines and assume higher levels of the three domains of learning in order to promote intellectual thinking and higher levels of application to students. Learning outcomes should be designed to accommodate both formative and summative assessment strategies.

Research Objective and Research Questions

This study explores the nature of learning outcomes of the module as understood by the facilitators. Therefore, the following research questions were used for this study:

- What was the nature of intended learning outcomes of 2011 Publishing Research as understood by facilitators?

- What was the nature of implemented learning outcomes of 2011 Publishing Research as understood by facilitators?
- What was the nature of attained learning outcomes of 2011 Publishing Research as understood by facilitators?

Research design and methodology

Qualitative case study research style is important for this study because it is more descriptive, holistic, explorative and contextual in its design and aims to produce rich description of investigated phenomena (Creswell, 1994). For this study, qualitative case-study helped to understand the deeper meaning of learning outcomes for the module because it is subjective in-depth, exploratory, interpretive and open-ended in nature; studies are conducted on entities in their natural settings as opposed to quantitative studies, which are conducted in controlled settings (Falconer & Mackay, 1999). Since this study requires gaining an in-depth knowledge and greater understanding of outcomes it will be conducted within the qualitative framework (Denzin & Lincoln, 2003).

Context and Sampling

Six Bachelor of Education Honours (6 B.EdHons) facilitators for 2011. The context in which this study was conducted was specifically within the six B.EDHons facilitators who were teaching the module in 2011. They were given names as Participant A1, A2, B1, B2, B3 and B4 as they were from two campuses (Campus A and B). Permission was obtained from the facilitators and the university. Participants were given a letter of consent to sign, containing details of the study, with the option of participating and / or withdrawing at any given stage of the research. Anonymity and confidentiality would also be guaranteed. These guiding principles were taken from Rand Afrikaans University (2002).

Purposive sampling was used for this study which, according to Patton (1990), is a method used when one chooses participants who are information-rich, based on the purpose of the study; in this instance the criteria being all facilitators who were teaching the module 'Publishing Research'.

Data collection and analysis

This research entails a multi-method study. The specific techniques for data collection that the study used were document analysis and semi-structured interviews. Documents analysed with an aim of identifying and defining learning outcomes and assessment strategies were module outline, prescribed book for the module, articles for the module, B.EDHons handbook, assignments, examination question papers and students' results.

Henning, Van Rensburg and Smit (2004), as well as Cohen, Manion and Morrison (2007), argue that documents and other artifacts are a valuable source of information and Henning *et al* (2004), continue to say that they should not be re-constructed but should be used as references.

During this research study, semi-structured one-to-one interviews were implemented: 6 participants took part in hour-long semi-structured interviews with the main aim of establishing the facilitators' understanding of learning outcomes. The interviews enable researchers to gain a detailed picture of the participants' views on a particular topic (De Vos, Strydom, Fouché & Delpont, 2002). Transcription was done in each of the interviews as the participants received a list of broad questions in advance without their sub-questions.

This study used priori analysis because units of analysis emerged from both the theory (Bloom's Taxonomies) and the three research questions. According to Samuel (2009), priori analysis is not flexible in terms of allowing researchers to modify principles of theories in order to accommodate important issues that emerge from the data. Units of meaning are selected according to theories (De Vos, 1998). Concepts are then grouped, related and categorised according to research questions (Rice & Ezzy, 2000). Themes or issues that emerge from the theory and research questions were then identified and re-contextualised by referring to the literature (De Vos, 1998). Findings relating to identified themes were reported. The choice of a multi-method approach is a means of ensuring the validity / trustworthiness of data generation. "Validity [trustworthiness] which is the extent to which any researcher's tool measures what is supposed to measure" (Holloway & Wheelers, 1996, p.162). Using multiple methods (triangulation) also allows for the prevention of personal bias (Denzin, 1989).

Findings (three themes)

Intended learning outcomes (ideal and written / formal)

Content used to generate the outcomes was: *What is research?; Different ways of seeing the world (paradigms); Research design and styles of research; Methods of collecting data; Distinguishing between facts and interpretations; Analysing and presenting qualitative data as well as Analysing and presenting quantitative data*

The module plan had thirty six (36) learning outcomes and one broad outcome. Twenty four (24) of the 36 were observable / measurable and were starting with key words from Bloom's taxonomies.

Some examples were: *Discuss different views on what research is, define the characteristics of research, describe the three paradigms, explain the relationship between the research question and methods of data collection, apply these concepts in the reading of research articles, analyse the methodology sections of some given research reports, critique the choice of data collection method in reported research studies, etc.* "

Most of the 24 learning outcomes were coming from cognitive domain with few from skill domain and none from affective domain. They were coming from all the levels of cognitive domain (understanding, comprehending, applying, analysing, synthesising, evaluating & creating) and only level two of skill domain (manipulation).

During the research 12 of the 36 learning outcomes were not observable and not measurable. They were similar to objectives as they were starting with broad keywords.

Some examples were: *"Know about the different sections of research reports, understand the strengths and limitations of different data collection methods, be familiar with types of questions which can guide you while reading research, etc."* One broad outcome was: *You will develop an understanding and knowledge of the research process so that you can analyse and critically evaluate a piece of research.*

The above findings for the intended learning outcomes suggest that the facilitators were not aware of the intended learning outcomes and other relevant issues of their teaching. Their teaching was mostly not driven by outcomes because other outcomes did not qualify to be learning outcomes but objectives.

Implemented learning outcomes (operational and perceived – facilitators)

The module activities given to students had the following purposes:

“The module aims to develop your competencies as a critical reader and user of research, which should enable you to put research into practice in your own teaching and perhaps also working with colleagues at your school, as well as develop your own competencies as a researcher. As part thereof, the module aims to:

Develop your understanding of the research process; give you an introduction to finding research in the library; develop your skills of reading, understanding and critically engaging research reports and journal articles; further your knowledge and understanding of research genres or styles of research, paradigms, methods of data collection, validity and presentation of findings; give you the opportunity to read, and think about educational research.”

Participant A1 gave the following as the outcomes for the module:

“The outcomes which were stated in the student guide, to the students:

Develop your understanding of the research process; give you an introduction to finding research in the library; develop your skills of reading, understanding and critically engaging research reports and journal articles; further your knowledge and understanding of research genres or styles of research, paradigms, methods of data collection, validity and presentation of findings; give you the opportunity to read, and think about educational research; give you an opportunity to reflect on your own practice as an educator or teacher leader etc in the light of the content of the readings.

In addition, there are some implicit or implied outcomes, such as improve one’s academic writing – but I see that as an outcome we build into all modules, at all levels. All of the above speaks to the issue of access to the academic discourse(s), and perhaps the outcomes could be stated differently?”

Other Participants agreed with the above outcomes. However,

Participant B3 added that “at the end of this module students should be able prepare a research proposal with relevant title, focus, rationale, literature review, theoretical framework, research design, sampling, methodology, ethical issues, data analysis, limitations, time-frame and budget, because the content is about research proposal design issues”.

Participant A2 added “for post-graduate module we concentrate on the cognitive part of teaching and learning in order to develop and promote critical thinking. So we take other domains as only important when we deal with under-graduate modules”.

The above findings for the implemented outcomes suggest that facilitators were mostly using aims and objectives to drive the module as they were not aware of the intended learning outcomes. This means the module was mostly driven by the teacher-centred approach as these suggest facilitators’ intentions.

Attained learning outcomes (experiential and learned - students)

Assessment strategies on the achievement of the outcomes were as follows:

“The module is assessed through a small portfolio task (5% - on literature review & referencing APA 5th), two smaller assignments (10% each on research proposal issues), one larger assignment (25% - on research proposal issues & critiquing an article) which models the final task (exam), written at the university (50% - on research proposal issues &

critiquing an article).

The above findings for the attained learning outcomes suggest that students achieved more than the intended learning outcomes. This means that the students went beyond what was intended or planned because the implemented learning outcomes (driven by aims or objectives) were different from the intended learning outcomes.

Discussion of findings, conclusions and recommendations

Intended learning outcomes: The module had good vision and intentions as specified in the documents because they were linked to the content (Van den Akker *et al.*, 2010). However, awareness as a very important ingredient of any successful teaching or learning process of a module was missing. Awareness of the learning outcomes has five important layers.

It means that facilitators, firstly, start by evaluating learning outcomes against the different levels of taxonomies before they start the module because relevant key words are taken from the taxonomies. The key words are used to ensure that the learning outcomes are observable and measurable (Adam, 2004). They are also generated from the content (what students are learning) to address all levels of the three learning domains of Bloom's taxonomies, especially the higher order levels.

Secondly, facilitators ensure that they distinguish aims and objectives from learning outcomes in driving modules (Khoza, 2010). Aims are general statements which are generated according to the facilitators' intentions, while objectives are specific statements that are also generated according to the facilitators' intentions. On the other hand, learning outcomes are addressed in terms of students' performance when they perform according to the relevant learning outcomes' keywords.

Thirdly, facilitators have to design, select and apply only appropriate learning activities that facilitate achievement of the entire module intended learning outcomes (SLO, 2008). These learning activities have to accommodate only relevant teaching and learning resources because learning is not about teaching and learning resources where students learn from learning resources but it is about ideology where students learn with resources (Amory, 2010). Nompula (2012) adds that they should also accommodate student's learning styles in order to achieve desired results.

Fourthly, facilitators address a question of why students are learning their modules by bringing in or inviting relevant community members that may contribute towards the success of their modules (Van den Akker *et al.*, 2010). They then choose the relevant approach or approaches to position their facilitation role. If they use aims or objectives to drive their lessons it means they are using the teacher-centred approach (behaviourist), if they use content to drive their lessons it means they are applying the content-centred approach (for cognitivist) and if they use learning outcomes to drive their lessons it means they are applying the student-centred approach (for constructivist) (Anderson & Elloumi, 2004). Other facilitators apply the three approaches as taxonomies of learning because they all have strengths and weaknesses.

Lastly, facilitators address questions of where learning is taking place and when learning is taking place so that they assess students after learning has taken place (Van den Akker *et al.*, 2010). It becomes important for the facilitators to assess students after learning has taken place. This only happens when facilitators are aware of the aims, objectives and learning

outcomes.

Therefore, this indicates that facilitators were not aware of the learning outcomes. In the absence of awareness, learning may not effectively take place as it is difficult for the facilitators to measure their performance against their students' achievement of the intended learning outcomes. This then suggests that learning was coincidentally taking place because facilitators failed to understand the nature of the intended learning outcomes by identifying and revising the learning outcomes that were not observable / measurable.

It is then recommended that awareness should always be a priority for the facilitators.

Implemented learning outcomes: Ignoring learning outcomes by using aims and objectives to drive learning indicates that learning was mostly about facilitators' satisfaction not students because aims and objectives are about facilitators' intentions (Donnelly *et al.*, 2005). This means that they took a position where it did not matter what was happening or how and why was it happening, but their interpretation of what was happening in their teaching process was important to drive their module (Mezirow, 1990). When facilitators' interpretation of what they are doing is positive, it does not matter how much other specialists in the field may criticise it, they will continue until they are forced by a certain force to transform in order to change their position.

In the case of this module they did not transform, except Participant B3 who felt that the module should also help students to develop research proposal because the content is about research proposal design issues. All participants were following what was given by Participant A1 except Participant B3 who was aware of the intended learning outcomes but half of his teaching had to follow others while another half of his teaching had to talk to the research proposal design issues as per the module content.

According to Anderson and Elloumi (2004, p8) the facilitators' satisfactory or teacher-centred approach has four learning implications that need to be considered in any teaching situation. Firstly, "students should be told the explicit outcomes of the learning so that they can set expectations and can judge for themselves whether or not they have achieved the outcome of the lesson". In this module the students were given the 36 intended learning outcomes but most facilitators used aims and objectives.

Secondly, "students must be tested to determine whether or not they have achieved the learning outcome. Testing or other forms of testing and assessment should be integrated into the learning sequence to check the student's achievement level and to provide appropriate feedback". In this module students were mostly tested or assessed against the aims and objectives. According to Kennedy, Hyland and Ryan (2006), testing or assessing against aims or objectives neither measure the facilitator's performance nor the student's performance because aims and objectives are not observable / measurable. For example, knowing and understanding, as the two common broad key words used in generating objectives, have many levels that need to be unpacked by generating learning outcomes that measure the student's performance according to taxonomies.

Thirdly, "learning materials must be sequenced appropriately to promote learning. The sequencing could take the form of simple to complex, known to unknown, and knowledge to application". In this module the challenge was that most of the facilitators did not follow the intended learning outcomes (let alone that others were not measured / observable) which means there was no appropriate method of sequencing learning materials.

Fourthly, “students must be provided with feedback so that they can monitor how they are doing and take corrective action if required.” In this module feedback was provided according to what facilitators wanted students to know rather than to understand. Knowing is about students’ ability of reproducing what was given to them by their facilitators, whereas understanding is about students’ ability of reflecting from their experiences in order to interpret and address the tasks that are given to them by their facilitators. This point was relevant in this module because the implemented learning outcomes suggest the teacher-centred approach that celebrates the knowing part of learning.

It is then recommended that facilitators should use all the three approaches (teacher-centred, content-centred and student-centred approaches) as taxonomies of learning according to their strengths.

Attained learning outcomes: In the absence of alignment between intended learning outcomes, teaching or learning methods, teaching or learning activities and assessment strategies; students face challenges in the process (Biggs, 2003). As a result, students have to cover or learn every possible chunk of information because what they are learning is different from what is intended in terms of outcomes. It is a common practice that when students are not given a clear direction of their curriculum they consult different sources in order to cover a broad scope of their curriculum (Mezirow, 1990). As a result they find their way by transforming themselves to accommodate the situation by learning what they think will be assessed, not the curriculum (Ramsden, 2003). For those who fail to transform, it is common that they drop out of their modules or fail the modules.

In assessing students for attained learning outcomes, formative and summative assessments are important. Formative assessment is a part of learning when students are assessed for their collection of relevant information. This indicates to facilitators where their support is required without necessarily grading students (it usually takes place during the learning processes). Summative assessment is a summary of formative assessment of their students’ achievements of learning outcomes where facilitators are grading their students (it usually takes place at the end of learning processes).

Kennedy *et al* (2006), indicate that it is a common practice that if these assessment strategies are used for continuous assessment, the process becomes a collection of different sets of summative assessment used in generating marks for grading students without any formative assessment element that helps the students with feedback. It was not different in this module as the facilitators only used different sets of summative assessment as indicated under attained learning outcomes (findings). This then confirms that for students, assessment starts at the beginning of the module.

Ramsden (2003) indicates that assessment takes place at the end of teaching and learning processes for facilitators, while it takes place at the beginning of the teaching and learning processes for students. This means students are being tested by anything that is given to them while their facilitators are sometimes not aware of this situation. Sometimes it results to this situation, when facilitators over practise their role of being social agents that promote culture and other social processes (Francis & Le Roux, 2011).

In this module the absence of alignment (Biggs, 2003) resulted in a situation where Campus A had more failure rate (about +50%) than Campus B (3% failure rate - 4 out of 122 students). The failure rate raised a number of unnecessary unanswered questions. The three top students who received merit certificates came from Participant B3’s class and Participant B3 enjoyed 100% pass rate in his class. This suggests that his approach that had 50% of intended learning

outcomes awareness and 50% research proposal development helped Campus B to achieve higher results than Campus A. It also help students from Campus B students to develop long life knowledge and skills for dealing with important research issues through research proposal development.

It is then recommended that facilitators should always align aims/-objectives intended learning outcomes, teaching or learning methods, teaching or learning activities and assessment strategies in order to do justice to their students.

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