THE BENEFITS FOR A TEACHER RESEARCHER: A CASE OF TEACHING PHILOSOPHY

Charles S. Masoabi

Dr., Central University of Technology Free State, South Africa cmasoabi@cut.ac.za

Abstract

Teaching philosophy could be regarded as one's convictions (Fusaro, 2009) about best teaching practices that would help learners to be successful in their learning journey in a particular subject and context. Therefore, a teacher jots down all the aspects, such as the teacher's and learners' roles he believes are most suitable classroom practices for effective teaching and learning guided by the objectives and expected outcomes (Casteel, 2012) of that subject. Moreover, as a teacher, one is not clueless or *tabula rasa* regarding various teaching methods even if one may not have concrete knowledge of them. Therefore, there is a possibility that earlier generations of teachers have had similar beliefs and have done research on the matter.

Therefore, a teacher researcher began a journey of literature review regarding educational philosophies (Stremmel, 2002) and to find the one closest to his beliefs of a conducive teaching environment. In this study, the teacher researcher found his position in social constructivism as a philosophical paradigm that embraced his believes on using collaborative teaching and learning methods to improve learners' knowledge acquisition, related skills and values (Driscoll, 2000 as cited in Brada,2015) as well as teacher's professional enhancement in Technology classroom.

In order to strive to achieve the attributes in the previous paragraph, the researcher studied cooperative learning approach and chose to employ student teams' achievement divisions (STAD) as vehicle towards obtaining above mentioned benefits. Due to globalisation, the researcher intended to prepare the learners and himself for future collaborative ways at work places.

The study used a single case study design for collection of data and inductive analysis of the results. The results have proven the study to have yielded positive outcomes for the teacher researcher.

Keywords: Social constructivism, STAD, teacher researcher.

1 INTRODUCTION

There are various teaching philosophies that have been amplified through research into educational ideologies, some are teacher-centred and others are learner-centred. As a teacher, the researcher strives to have a classroom environment enjoyable for learners and himself (Casteel, 2012). This kind of context could

be attained by enthused teaching that takes place when the teacher employs methods of content delivery appealing to his or her beliefs on teaching and learning. Therefore, his enthusiasm would likely effect energy and learning morale among the students. The researcher believes in methods of teaching that enhance learning and learner participation as well as application of acquired knowledge by learners. Foremost, the methods of teaching should comply with subject policy documents requirements on classroom practices that would achieve the expected outcomes.

Thus, a teaching philosophy helps colleagues and supervisors to comprehend how one views meaningful teaching and learning - what pedagogical practices drive one's teaching to attain expected outcomes and the reasons behind the preferred classroom practices (Boye, 2012) for the betterment of students' learning. The researcher's objectives in class are to challenge his learners to develop small-groups skills, critical thinking, decision making and problem solving skills through working with other learners. Moreover, the researcher enjoys a free spirited classroom environment with inclusive teams to enhance learning and use of multiple methods of content delivery.

1.1. Background of the study problem

The Gauteng Department of Education (GDE) improvement strategy document indicates that Technology education in South Africa was introduced at the dawn of Curriculum 2005 in 1997 which was underpinned by constructivism as Outcomes-based Education (GDE, 2010). The aim of introducing Technology was to improve learners' problem-solving skills, creative innovations, critical thinking and citizens that are caring and responsible towards their surrounding (Gibson, Smith, Chemberlain, Falcon & Gerrans, 1997). The National Curriculum Statement Grade R-12 further encourages active and critical approach to learning and this formed the basis for the researcher's teaching philosophy (DBE, 2011). The subject takes form of broad-based curriculum that includes the following content areas, construction structures, electrical systems and control, mechanical systems and control, graphic communication and the technological process as framework for designs (DBE, 2011). As a Technology teacher the researcher needed to identify teaching theory that speaks to his beliefs regarding teaching and the role of the teacher in the classroom. He further had to investigate teaching methods underpinned by that teaching philosophy in order to achieve curriculum requirements.

1.2. Research questions

What would be the teaching philosophical paradigm that underpins and govern these cluster of researcher's beliefs pertaining to teaching?

How could this learning theory enhance my teaching to achieve curriculum outcomes?

1.3. Research aim

The inquiry seeks to determine the philosophical theory that would guide the researcher's beliefs about his ideal teaching practices and environment. Also to investigate the ways in which the anticipated theory of teaching and learning would enhance the researcher's classroom practice to achieve the envisaged curriculum outcomes.

Furthermore, the GDE improvement strategy document seeks to achieve the quality of teachers that are able to interpret and embrace the Technology curriculum requirements such as instilling positive attitudes and values to learners (GDE, 2010). Therefore, by upholding the curriculum aims of producing the envisaged learner as indicated in the previous paragraph – a constructivist teacher would create an environment that would promote active learning. A context where learners in inclusive teams would engage in technological designs to solve authentic problems for them to construct their own knowledge and understanding of the content and its application (Gilakjani, Leong & Ismail, 2013). Environment such as this would allow learners to individually develop cognitive abilities as well as socially acquiring knowledge by learning from others (Le Cornu & Peters, 2005) since constructivism advocates for a learner-centred classroom context.

A constructivist teacher could be explained as character that is willing to improve his knowledge and accompanying skills for professional growth in order to improve on content delivery (Le Cornu & Peters, 2005) as well as moulding learners to inquire beyond what the subject matter prescribes. This kind of exercise would help learners to yearn for the application of the acquired knowledge in solving problems in real life situations (Holt-Reynolds, 2000). A constructivist teacher does not inject knowledge as if it's rigid, but rather facilitate the process and guide learners (Vij, 2015) to achieve knowledge construction within their collaborative groups by debating possible avenues to reach the final conclusion. Therefore, a constructivist teacher prompt his students to embark on deeper learning (Ugwegbulam & Nwebo, 2014) of the subject

matter through probes that lead and encourage learners to reach conclusions by themselves. Thus the teacher prepares his lessons and resources in a manner that would assist learners to achieve the envisaged outcomes such as social skills and cognitive comprehension as well as the appropriate utilisation of knowledge gained. Also, a constructivist teacher is flexible in his/her instruction in a way that allow learners questions to have input in directing the lesson (Brada, 2015) towards further understanding of prior knowledge in comparison with the new subject content.

2 THEORETICAL FRAMEWORK OF THE INQUIRY

Theoretical framework reviews literature on the theory of learning that guides the inquiry.

2.1. Social constructivist view of a teacher

In social constructivism, a teacher is observed as a mediator (Teague, 2000) who guides learners through learning to independently arrive at common conclusions of knowledge attained. Secondly, Dagar and Yadav (2016) agree that according to Vygotsky's Zone of Proximal Development (ZPD), teachers are perceived to advocate collaborative methods of teaching and learning (Wang, Bruce & Hughes, 2011) since learning is driven by structured cooperative groups. Therefore, this socially organised learning situation promotes debates among learners around the taught content to argue and defend their perspectives towards constructing mutual knowledge and comprehension (Geiger, 2006). Moreover, collaborative methods of teaching employed by constructivist teachers are said to be improving higher order cognitive skills of learners (Palincsar, 1998; SCIMAST, 1994).

2.2. Benefits of Constructivist teacher

Furthermore, a constructivist teacher continually reflects on his lessons and also helps his learners to cultivate reflective attitudes, metacognitive skills and processes (Le Cornu & Peters, 2005) leading to achieving learners' responsibility for their classroom learning. In constructivist classroom a teacher through active engagement of learners and probes also develops mechanisms of coping with learners' ambiguity (Amineh & Asi, 2015) while directing their knowledge towards expertise of the subject matter. Thus in constructivist classroom, a teacher is not rigid to the textbook but rather flexible to draw from everyday experiences of learners in order to assist the reconstruction of new understanding from their prior knowledge. To achieve such manner of conducting classroom teaching and learning environment, it must be infused in ones beliefs (Amineh & Asi, 2015; Brooks & Brooks, 1999) on how he observes human knowledge construction.

Furthermore, a constructivist teacher also gains more subject knowledge through his interactions with learners' probes, as Vygotsky's social constructivism indicates that knowledge is communally developed (Amineh & Asi, 2015; Vij, 2015) and then internally processed by individuals. Therefore, it is evident that constructivist teacher values the inputs and views from his learners in order to also develop his understanding from learners' perspective. Moreover, constructivist teacher benefits from learners enjoying vigorous participation of learners taking ownership of learning (Ugwuegbulam & Nwebo, 2014) and exploring various avenues to reach profitable conclusions. Through this collaborative teaching and learning environment a constructive teacher reaps the fruits of good and respectable communication skills and social interactions among his learners. Thus, classroom management becomes easier due to continuous interaction between the teacher and various working groups (Teague, 2000), which also allow the teacher to vary his/her lesson presentation strategies.

2.3. Benefits of using STAD

STAD as a cooperative learning method, is underpinned by social constructivism where learning is effected through social interactions within STAD teams (Slavin, 1995). According to (OECD, 2010), learning outcomes have evolved lately and therefore would require pedagogy that would address most of these outcomes and cooperative learning methods have been proven to achieve majority of these outcomes; academic achievement, small group relations, social skills, attitudes to subjects and social justice (Sharan, 2010; Slavin, 1995). STAD further addresses the need to bridge the gap between high achieving and low achieving learners in a sense of motivating low achievers to up their academic commitment (Donnelley, 2009). Thus, productivity and effectiveness of the STAD groups emanates from proper structuring of group content/members and teaching them cooperative learning, principles, values and expectations (SCIMAST, 1994) as well as each member's role in the team. Learners would then understand that groups are set for work purposes because they were not based on friendship but heterogeneously selected. Therefore, providing a reasonable coverage in terms of intercultural collaborations spanning cultural differences and

misunderstandings (Sharan, 2010) in a culturally diverse classroom setting. Most importantly, the use of STAD in Technology classroom improves the teacher's professional attributes.

2.4. Technology Education

The definitions range from the historical background of inclusion of Industrial Art in the school curriculum, Handcraft, Technical Education to present the time of Technology. Secondly, technology as a term is broad, for example encompassing computers, machines, buildings, clothing production, furniture making and media devices. In this context the definitions focus only on Technology as a school subject.

In the South African context, the National Department of Education (NDE) (2002) described Technology as the "use of combination of knowledge, skills and available resources to develop solutions that meet the daily needs and wants". The latest definition by the Department of Basic Education (DBE) in the new Curriculum and Assessment Policy Statement (CAPS) (2012) states that Technology is "the use of knowledge, skills, values and resources to meet people's needs and wants by developing practical solutions to problems, taking social and environmental factors into consideration".

From the definition above, it is deduced that learners need to deep learning and construction of knowledge to be able to apply it in solving existing problems – and this manner of learning is associated with constructivists' methods of teaching and learning. Furthermore, considering social factors would need an individual that is actively involved with his or her society to determine and comprehend the contextual issues with the society.

3 RESEARCH METHODOLOGY

This study has employed a naturalistic, interpretivist and constructivist qualitative research designs for thorough exploration and explanation of the phenomenon (Technology classes where STAD is administered) and the benefits thereof on the learners and the researcher (Creswell, 2012). The inquiry employed a single case study as qualitative research design since it allows heterogeneous viewpoints (McMillan & Schumacher, 2010; Gray, 2009) for the development of rich contextual comprehension. For the purpose of generating data, tools such as reflective journal and observation schedules were used. On the reflective journal, the researcher recorded the classroom events during the employment of STAD in Grade 8 classroom. The observation schedules were completed by teacher colleagues with varied teaching experiences, who were available to do class observations on the researcher and learners in Grade 8 Technology classes where STAD was used as teaching method and a learning technique.

3.1. Data presentation and analysis

Data from the reflective journal has indicated various instructional benefits the researcher reaped from employing STAD as a constructivist method of teaching and learning technique. The following analytic criteria in table 1 were generated from the literature review.

| MAIN CRITERIA | SUB-CRITERIA |
|------------------------------|-----------------------------|
| Lesson Planning | Lesson Structuring |
| | Diagnostic |
| Time Management | Teacher-Learner Interaction |
| | Productivity |
| Class Control and Discipline | Managing Time Wastage |
| | Keeping Learners Focused |

Table 1 Analytic Criteria

The generated data revealed that a constructivist teacher plans his/her lessons in advance and the state of being prepared before the class presentations allows the teacher to structure the content in a manner that would assist or provoke learners to seek more clarity from team mates or the teacher. Thus prompting learners to ask questions and fully participate in the lesson. Due to the readiness of the researcher, he was able to engage learners on their probes guiding them to obtain conclusions by themselves. During the lesson delivery, it also became easy for the researcher to determine prognosis of the state of class, if the class was not on the same page as him – he would then come up with diagnostic measures before carrying on with the lesson. Whereas in the beginning of the inquiry, the researcher used to prepare a lot of content, dishing out to learners not giving them time to engage with the material on their own to create independent comprehension of the work. Therefore, learners were not really actively involved, and this changed by focusing on engaging learners more than the teacher's delivery time.

Furthermore, the data showed that the researcher was able to use time effectively predetermining the order and amount of time needed for various classroom events. After presenting a lesson and explaining concepts, the he would handout worksheets that learners had to work on in their respective teams. At that time he is moving from group to group to see that all members are involved in discussions, also to assist groups that might need his intervention. This visibility of the teacher among the groups improved learners' commitment to their work, and his accessibility further enhanced progress in terms of learner understanding of the work as help for individual groups was always available. Moreover, due to preparation, the researcher was also able to keep class questions on track and not going astray for long and thus productivity among the STAD teams was increased.

STAD as a constructivist teaching method further benefitted the researcher with good class control and discipline by continually communicating cooperative learning group values and principles to learners. Also the researcher was able to identify time wasting behaviours among the learners, such as times wasted between periods' exchanges, settling down in class and being ready for the lesson. He therefore created a routine for learners to minimise time wastage and improve discipline, such as lining up at the door and entering in an orderly manner reduced settling time. The continued interaction with groups kept learners focused on the task at hand as he was able to pick up and quickly rectify unwanted behaviours, and groups would also report members that are hindering group progress unnecessarily.

Data from observation schedules where peer teachers observed the researcher's Technology classes where STAD was implemented as a constructivist teaching method. Reports from the observing teachers concur with the reflections on the reflective journal indicating that during his presentation – the researcher used probes to engage learners.

Mrs.Gomez: "The teacher encourages responses from learners by asking questions; as he revised previous learning material. The responses were plotted as summary on a whiteboard"

Therefore, learner participation increased scrutinising the content to make meaning and create knowledge that learners would be able to relate with and apply. The important part regarding thorough digging into the content enhances deep learning among learners.

Mr. De Venter: "Very good, the lesson is kept lively by question and answer method, leading the learners to develop their knowledge about packaging".

Allowing open class and group discussions are easily facilitated by the teacher that is prepared for the lesson in order to be able to contain the learners' probes and direct them in the right direction to improve learning and comprehension of the concepts.

Mrs Blitz: "He is confident and clearly at ease with the subject".

Mr Martins: "Teacher is well prepared and confident with the subject".

Thus the teacher gains confidence in his lesson facilitation when well prepared beforehand.

Furthermore, moving around the groups during group tasks increased effective participation on task at hand as well as good classroom discipline and atmosphere conducive for learning.

Ms Robinson: "He responds positively and guides the learners walking from group to group, assisting their thought processes".

Mrs Johnson: "Educator is as inclusive as possible".

Mr Barnard: "The groups were disciplined yet open - comfortable and respectful interaction environment existed".

Moreover, tasks were structured in a way that learners were able to build upon previous knowledge to try and solve the complex ones on their own first, and call for assistance in case of struggles to draw from previous knowledge.

3.2. Conclusions and recommendations

Arising from data analysis and literature, it could be deduced that, researching about one's teaching philosophy and adopting teaching and learning methods underpinned by such theories is a beneficiary exercise. The inquiry has proven that the researcher profited in various aspects of teaching, such as good classroom control, classroom environment suitable for enhancing learning and learners that volitionally engaged in their activities to generate knowledge. The researcher was further able to entertain and expand on learners' probes to more engagement of learners due to thorough preparation for lessons and therefore time was managed well and used effectively during STAD lessons. The researcher therefore advocates for teachers to explore their teaching philosophies through research to earn the benefits towards improving their teaching and learners' learning capacity.

REFERENCE LIST

- Amineh, R. J., & Davatgari, H. (2015). Review of Constructivism and Social Constructivism. Journal of Social Sciences, Literature and Language, 1 (1).
- Boye, A. (2012). Writing your teaching philosophy. Teaching, Learning and Professional Development Centre, Texas Tech University.
- Brada, S. O. (2015). Constructivism Learning Theory: A Paradigm for Teaching and Learning. IOSR Journal of Research & Method in Teaching, 5 (6).
- Brooks, J. G., & Brooks, M. G. (1999). In Search of Understanding: The Case for Constructivist Classrooms. Association for Supervision and Curriculum Development, Virginia.
- Casteel, M. (2012). Statement of Personal Teaching Philosophy. Milton S. Eisenhower Award for Distinguished Teaching.
- Creswell, J. W. (2012). Educational research: planning, conducting and evaluating quantitative and qualitative research 4th ed. Boston: Pearson.
- Dagar, V., & Yadav, A. (2016). Constructivism: A Paradigm for Teaching and Learning. Arts and Social Sciences Journal, 7 (4).
- DBE (Department of Basic Education) (2011). Curriculum and Assessment Policy Statement Grades 7-9 Technology. Pretoria: Government Printer.
- DBE (Department of Basic Education) (2012). Curriculum and Assessment Policy Statement (CAPS) Technology Senior Phase. Final draft. Pretoria: Government Printer.
- Donnelly, R. R. (2009). Learning Together: Improving teaching, improving learning. HM Inspectorate of Education, Livingston.
- Fusaro, M. (2009). What is teaching for Understanding? Harvard Graduate School of Education. http://www.uknow.gse.harvard.edu/teaching/TC3-1.html/09/12/2012.
- GDE (Gauteng Department of Education). (2010). Mathematics, Science & Technology Education Improvement Strategy. Gauteng Provincial Government.
- Geiger, V. (2006). The emergence of social perspectives on the use of technology in mathematics education. Australian Catholic University.
- Gibson, R. L., Smith, C. T., Chamberlain, S. E., Falcon, R. M. S., & Gerrans, G. C. (1997). Science and technology education and the new South African school curriculum. The Journal of the South African Institute of Mining and Metallurgy, 1 (1).

- Gilakjani, A. P., Leong, L-M., & Ismail, H. N. (2013). Teachers' Use of Technology and Constructivism. International Journal of Modern Education and Computer Science, 4 (1).
- Gray, D.E. (2009). Doing Research in the Real World. 2nd Ed, London: SAGE.
- Holt-Reynolds, D. (2000). What does the teacher do? Constructivist pedagogies and prospective teachers' beliefs about the role of a teacher. Teaching and Teacher Education, 16 (2000).
- Le Cornu, R., & Peters, J. (2005). Towards constructivist classroom: the role of the reflective teacher. Journal of Educational Enquiry, 6 (1).
- McMillan, J.H. & Schumacher, S. (2010). Research in education: evidence-based Inquiry 7th Ed. USA. Pearson Education Inc.
- NDE (National Department of Education). (2002). Revised National Curriculum Statement Grades R-9 (Schools) Policy: Technology. Pretoria: Government Printer.
- OECD. (2010). The Nature of Learning: Using Research to Inspire Practice. Organisation for Economic Cooperation and Development.
- Palinscar, A. S. (1998). Social Constructivist Perspectives on teaching and learning. Annual Review of Psychology, 1 (49).
- SCIMAST. (1994). Classroom Compass: Cooperative Learning. Southwest Consortium for the Improvement of Mathematics and Science Teaching, 1 (2).
- SCIMAST. (1995). Classroom Compass: Constructing Knowledge in the Classroom. Southwest Consortium for the Improvement of Mathematics and Science Teaching, 1 (3).
- Sharan, Y. (2010). Cooperative Learning for Academic and Social Gains: valued pedagogy, problematic practice. European Journal of Education, 45 (2).
- Slavin, R. E. (1995). Instruction Based on Cooperative Learning. John Hopkins University & University of York.
- Stremmel, A. J. (2002). The Value of Teacher Research: Nurturing Professional and Personal Growth through Inquiry. Voices of Practitioners, 2 (3).
- Teague, R. (2000). Social Constructivism & Social Studies.
- Ugwuegbulam, C. N., & Nwebo, I. E. (2014). Constructivist Teaching Model: Implications for Serving Teacher Educators of the Old School Generation. International Journal of Academic Research in Business and Social Sciences, 4 (6).
- Vij, S. (2015). The Construction of Knowledge. Teacher, 9 (3).
- Wang, L., Bruce, C. S., & Hughes, H. E. (2011). Sociocultural Theories and their Application in Information Literacy Research and Education. Queensland University of Technology, Brisbane Australia.