

Full length Research paper

A case study on activity-based learning in business management contact session

*Trevor Ndlovo, Mbemke Kgalema and Thabo E. W.

Faculty of Economic and Management Sciences, North-West University, Potchefstroom Campus, Private Bag x6001, Potchefstroom 2520, South Africa.

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Many business management lecturers in higher education institutions conform to traditional teaching methods, such as lecturing, with the occasional questions-and-answers teaching method. This pedagogical approach often results in poor class attendance as well as business management students being utterly bored and negative towards the subject. In this research, the strategy for implementing activity-based learning in business management classrooms, as well as several instructional guidelines, is given. The instructional guidelines in this article are derived from a case study on activity-based learning in business management contact sessions. The data obtained from this case study is reported qualitatively. Results from this case study also motivate the importance for business management lecturers in higher education institutions to enhance their own pedagogical skills and activate students with challenging in-class activities and skills development.

Key words: Activity-based learning, business management, teaching strategies.

INTRODUCTION AND PROBLEM STATEMENT

Many undergraduate business management students find the teaching of business management in higher education institutions unsatisfying and sometimes boring. These students experience the business management classes as contact sessions where lecturers often repeat subject matter that is already in textbooks. In some cases, lecturers do make use of excellent contemporary case studies and examples to clarify the content, but often, these lectures are characterised by lecturers doing all the talking without opportunities to engage students in constructive participation. This direct teaching method (Hall, 2006) results in business management students being utterly negative about the subject. Often, it also leads to poor class attendance or even students walking out of classes during lectures. In most instances, the motivation for students to attend classes are either fear for possible formative assessment opportunities, such as tests, which could influence their chances of passing the subject, receiving examination guidelines or copying PowerPoint notes.

According to Alexander and November (2010),

lecturers in higher education institutions need to engage students during contact sessions. This does not mean using only the questions-and-answers teaching method and group work assignments. To engage students' means that they are actively involved in the learning process during contact sessions, they take responsibility for their own learning, they are intellectually challenged, and there is a purposive focus on the development of their critical thinking skills (Killen, 2007).

Conceptual approach to this research

Lecturers who engage students during contact sessions typically follow a constructivist approach to teaching and learning (Schunk, 1996). This means actively involving students to discover and process information autonomously. The constructivist approach to teaching and learning focuses on learner-centred teaching where lecturers act as facilitators and are responsible for presenting subject matter meaningfully and interestingly and providing opportunities for students to discover and apply their own ideas (Slavin, 2000). According to the constructivists, lecturers need to support students to become self-regulated learners (Ertmer and Newby,

*Corresponding author. Email: dr.ndlovo32@gmail.com

1996; Zimmerman, 1989). Students should therefore be given the opportunity to construct their own knowledge, manage their own learning processes and develop metacognitive abilities (Ram, 1996).

Stemming from the pure constructivist theory, another theory, specifically applicable to activity-based learning, is the social constructivist learning theory. According to Schunk (2000) and Slavin (2000), social constructivism is based on the supposition that people construct knowledge from interacting with others. Social interaction therefore encourages students to verbalise and evaluate their own thinking by comparing their ideas with those of others.

Since social constructivism promotes the notion of students constructing their own knowledge when interacting with others, Spivey (1997) warns that lecturers should always evaluate the reliability of students' self-constructed knowledge because knowledge will change in conjunction with the reality of the students. In a social constructivist learning environment, students often give different meanings to reality in different contexts. It is therefore important to know when knowledge is reliable or not (Von Glaserfeld, 1995). This is often seen when different groups of students are solving the same problem and different solutions arise from this. According to Von Glaserfeld (1995) and Murphy (1997), the reliability of knowledge depends not only on the applicability thereof within the context where it was constructed, but also if it is accepted and deemed as truth by most people of a social group. The lecturer therefore needs to scaffold the students' thinking to a mutually accepted truth.

Activity-based learning

Activity-based learning enables students to develop higher-order thinking skills through applied problem-solving and the construction of their own knowledge (McMahon, 2007; Adriaen, 2007; Gijbels et al., 2006; Snyman, 2000). According to Levine and Guy (2007), activity-based learning is a method whereby lecturers present real-world problems for students to solve. Knowles (2004) defines a problem as any unanswered question that is considered or activities that must be completed. Hicks et al. (2005) broaden this notion by stating that a problem is also a situation that is characterised by a feeling of conflict that arises between what is perceived to be an actuality and what is perceived that might become actuality.

According to Ameis (2008), activity-based learning focuses mainly on the solving of either routine or non-routine problems. Routine problems are problems people come into contact with on a daily basis, such as a business manager calculating the daily turnover of his/her business sales. Routine problems expect low levels of attentiveness, have easy solutions that will rarely be faulty and do not expect complex or critical thinking

abilities (Schloeglmann, 2004). Schloeglmann (2004) further warns that routine problems should not be seen as the opposite of non-routine problems. Non-routine problems are rather extensions of routine problems. Non-routine problems are any activity that must be completed where the process of completion is unfamiliar to the students. It is because of this reason that activities aimed at the development of students' critical thinking abilities are also known as non-routine problems (Schloeglmann, 2004). Solving non-routine problems is challenging and expects of students to use their critical thinking abilities. According to Ameis (2008), non-routine problems also aim to develop and improve students' argumentative and innovative abilities.

In higher education, it is expected from lecturers to enable students to solve three types of non-routine problems (Government, 2004). These problems, which include undefined, concrete and abstract problems, can either be prepared individually or they can be integrated into a single activity.

Undefined problems

According to Ward and Lee (2002), the contextual parameters of these problems are not defined. A typical example in business management is a problem such as "Compare the establishment methods of different business forms". This problem is undefined since the creator did not provide the parameters for solving it. In comparison, the next problem is more defined: "Compare the establishment methods of sole proprietors and closed corporations in South Africa" or "Compare the establishment of business forms in South Africa and the USA". Undefined problems therefore do not restrict students to specific contextual parameters. These problems expect students to determine the contextual parameters themselves and provide clear argumentative motivations for their choices (Moon, 2005). Lecturers should use undefined problems in activity-based learning when they aim to develop or improve students' analytical and decision-making abilities.

Concrete problems

According to Drangajov et al. (2005), these problems have clear parameters within which problems need to be solved. To determine the concreteness of a problem, it is recommended that the problem should be analysed to determine its extent in terms of knowledge, context and cognitive skills. This means students must be able to identify the specific knowledge, context and cognitive skills needed to solve the problem and complete the activity. Problems where any of these elements are not present would therefore be either classified as undefined or abstract problems. In a problem such as "Evaluate the

off-shore value chain of Chevron Texaco in the Philippines", the concrete nature of the problem refers firstly to the students' knowledge of value chains and secondly the context of the knowledge, being Chevron Texaco in the Philippines. Value chains are seen as the knowledge parameter, since it is the only knowledge from the field of operations management needed to solve this problem. Chevron Texaco in the Philippines, in turn, provides context, since it is the company applicable to the problem. The third element, cognitive skills, refers the action word used in this example, which expects the students to evaluate. If the students, for any reason, demonstrate a skill other than to evaluate, such as to describe, or explain, the concrete nature of the problem is not being attended to. Lecturers using these types of problems would likely focus on the assessment of students' abilities to apply knowledge in a real-life situation; and depending on the action words, either lower-order or higher-order thinking skills (Bloom et al., 1956).

Abstract problems

These problems enable students to make generalisations by having freedom of thought (Smith et al., 2008). The extent of freedom is determined by the abstract noun in the problem, which enables the students to form a specific perception of the problem (O'Connor, 2001). A typical abstract problem would be "As a business consultant you must convince the owner of a sole proprietorship to establish a closed corporation". The abstractness of this problem is secured in the abstract noun "convince". The way in which the students will interpret this problem and provide persuasive arguments will be influenced by their imaginative perception of the level of knowledge of the owner of the sole proprietorship, his motivation for operating a sole proprietorship and the possible advantages embedded in establishing a closed corporation. Abstract problems are mainly used in simulative instances, such as role-play. Lecturers using these types of problems would mainly assess the extent of students' knowledge about the theme, their communication, persuasion and argumentative skills.

The planning of activities is an unquestionable necessity in activity-based learning. The types of problems to be developed will be determined by the subject matter as well as the cognitive skills lecturers want students to develop. Although non-routine problems expect students to demonstrate their knowledge and thinking abilities, the complexity of learning embedded in these problems should not be decided upon lightly. The complexity of the learning embedded in problems must be in line with the abilities of the students. Therefore, a specific type of problem could be more or less complex depending on the abilities of the students. Problems to be

solved by first-year students would be less complex than those for students in their third year of study.

Lecturers must realise that each problem would follow a specific problem-solving process (Mafa, 2003). Activities that expect students to analyse a situation will, for instances, be solved differently from an activity that expects the students to evaluate the same situation. The action words would therefore guide the students in the process of solving problems. However, it remains the responsibility of lecturers to guide and support the students when facing problems that require a specific problem-solving process (Lynch and Wolcott, 2001).

The role of lecturers in activity based learning

During the planning of activities, lecturers must determine if the activities should be completed individually or in groups. Although lecturers can expect students to solve problems individually, most lecturers combine activity-based learning with cooperative learning. With cooperative learning, students work in groups to enable them to compare their ideas, develop their critical thinking, and acquire knowledge of the essential concepts of the subject (Adriaen, 2007; Fardanesh, 2006; Arends, 1997). Combining activity-based learning with cooperative learning also creates opportunities for lecturers to develop students' critical and innovative thinking (Van den Berg, 2004; Snyman, 2000), since they are given the opportunity to criticise each other's viewpoints.

In addition, lecturers also need to encourage self-regulated learning and monitor the cognitive levels of students' thinking. If students struggle to solve problems, lecturers need to scaffold the learning process with hints, guiding questions or references. As part of the monitoring process, lecturers need to provide continuous feedback on the progress of the students. Feedback enables students to reflect on their own thinking when solving problems, and therefore the development of their metacognitive skills (Trabandt, 2002; Lynch and Wolcott, 2001).

During contact sessions, when the students are solving problems, lecturers should also be continuously on the lookout for other problem-solving opportunities. Opportunities for problem-solving will typically arise when students ask questions about the activity. Instead of providing the answers, these questions should be redirected back to the students. This would avoid situations where students are deprived of opportunities to investigate and solve problems on their own (Mokhaba, 2005).

EMPIRICAL STUDY

This research was conducted by using the case study method. According to Yin (1984), a case study is a qualitative research

method aimed at investigating a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used. This research therefore aims to provide a detailed contextual analysis of activity-based learning in an undergraduate business management classroom. The main reasons for using a case study were to examine a contemporary real-life situation and to provide a basis for the implementation of activity-based learning in business management.

The research questions

From the aim of the research and the problem statement, the following research questions will be answered:

1. The students:

- i. What is the frequency of the students' contact session attendance and what are their reasons for attendance and non-attendance?
- ii. To what extent are the students engaging in the learning experience?
- iii. How are students interacting with each other?
- iv. What are the students' attitudes towards activity-based learning?
- v. To what extent were students motivated to engage in self-regulated learning?

2. The lecturer:

- i. What types of activities are used during contact sessions?
- ii. What types of teaching aids are used during contact sessions as well as for out-of-class teaching?
- iii. What teaching strategies were used in combination with activity-based learning?
- iv. How does the lecturer facilitate learning?

The research process

This research was conducted using the six steps for case studies proposed by Soy (2006). These steps were derived from several researchers' work on case study research and include:

- Step 1: Determine and define the research problem.
- Step 2: Select the cases and determine data gathering and analysis techniques.
- Step 3: Prepare to collect the data.
- Step 4: Collect data in the field.
- Step 5: Evaluate and analyse the data.
- Step 6: Report.

The case study

Since the evaluation process of activity-based learning is lengthy and intensive, only one module/course was evaluated for the purpose of this research. The module, Principles of Entrepreneurship, is a third-year module in the Entrepreneurship and Business Management programme at the North-West University (Potchefstroom Campus) in South Africa.

Forty students registered for this module in January 2011. The module commenced in February 2011 and ended with an examination in June 2011. During the semester, the lecturer was continuously evaluated on his pedagogical approach during contact sessions as well as for out-of-class teaching. In turn, the students were observed with regard to their reaction to the lecturer's pedagogical approach, their attendance and their efforts in mastering the learning objectives.

Case study context

According to the timetable developed by the North-West University,

four periods of 45 min each were allocated to this module per week. These periods were grouped into two double periods, with one double period on Mondays and the other on Fridays. All together, the semester consisted of twelve academic weeks, which resulted in a total of 24 contacts sessions.

The lecturer decided to use the Monday periods as theoretical periods and the Friday periods as practical periods. During the theoretical periods, the lecturer facilitated the mastering of theoretical objectives. This was done by conducting contact sessions where students worked from the textbook, articles or the lecturers' notes, while solving problems. On Tuesdays, the lecturer posted practical activities on the University's learning management system (LMS) for students to complete and present during the Friday periods. On Thursdays, before twelve o'clock, the lecturer posted the assessment rubrics of the presentations on the University's LMS for guidance in the format and assessment of the presentations.

Pedagogical approach

The lecturer created a social constructivist learning environment in and outside the contact session. The lecturer facilitated all contact sessions by using the following procedure:

- i. Administration: At the start of each contact session, a few minutes were used to convey information such as test and assignment dates, shifts in the university calendar and any other relevant administrative information. This time was also used to gain information from the students on their learning needs.
- ii. Context: The lecturer always started each learning experience with a brief context. Although the context in most contact sessions was established by showing videos applicable to the learning content, the lecturer also used pictures, general story telling or the Internet. The videos immediately attracted all the students' attention to the learning process and were, in the case of business videos, also the contextual parameters of the activities to be completed.
- iii. Learning objectives: Following the context, the lecturer presented the learning objectives for the contact session. This was done by using a PowerPoint slide. A contact session never had more than five learning objectives and in cases where higher-order thinking skills, such as analysis or evaluations were focused on, as few as two or three learning objectives were identified, because developing higher-order thinking skills is time consuming.
- iv. Activities: The activities to be completed by the students were all based on the learning objectives. If the learning objectives did not expect high levels of thinking, such as application, mind maps or summaries, only one activity was used for the mastering of a single learning objective. Instances where learning objectives expected higher-level thinking, more than one activity was usually used. For instance, when the students had to evaluate a certain scenario, the first activity focused on the development of criteria for evaluation. The criteria would then be peer-assessed by the different groups, handed back to the groups, and adapted if necessary. Since the skill to evaluate include controlling and criticising elements (Anderson et al., 2001), the lecturer then used a second activity to engage the students in controlling and a third activity where they used their developed criteria to criticise.
- v. Assessment: The lecturer never made use of formal assessment opportunities, such as tests, during the contact session. All assessments were informal, meaning all activities were only used to determine whether the learning objectives were mastered and not for allocating marks. This was done by asking questions and receiving student feedback. At the end of each contact session, the lecturer presented the same learning objectives as shown at the start. The students were then given the opportunity to self-reflect on their mastering of the learning objectives. Before the students adjourned, the lecturer expected of them to hand in a piece of

paper where they had to write in one sentence what they have learned in the contact session. This was used by the lecturer to reflect on the teaching and learning experience.

Data collection

According to Soy (2006), a key strength of the case study method involves using multiple sources and techniques in the data collection process. In most instances, case study research generates a large amount of data; therefore, the systematic organisation of the data is important to prevent the researcher from becoming overwhelmed by the amount of data. In this research, all primary data collected was categorised, sorted and stored to enable an organised retrieval process during data analysis. Data were primarily collected by means of observations and the lecturer evaluation, although the lecturer's insight into the pedagogical approach was also included.

Observations were conducted using a protocol sheet. The protocol sheet was used as a framework for observing elements in the pedagogical approach of the lecturer as well as the reactions of the students. The protocol sheet differentiated between several categories, and included the actions and reactions of the students and the lecturer as well as the students' attendance, involvement in the learning process and their learning gain.

The standard lecturer evaluation system used by the North-West University provided the opportunity for students to evaluate the lecturer's pedagogical approach as well as their perceived learning gain. Although the lecturer evaluation questionnaire is standardised throughout the University, for the purpose of this study, the students were also requested to provide descriptive answers to questions pertaining to the research questions.

The data collected in this research is reported on according to the categories of the protocol sheet. The protocol sheet also enabled the researcher to provide a thorough discussion on the case study context as well as the lecturer's pedagogical approach.

RESULTS AND DISCUSSION

All the results from this case study are discussed in clusters that focus on the actions and reactions of the students and the lecturer as well as the perceived improvement in students' attendance, involvement in the learning process and their learning gain.

Student actions and reactions

The students reacted very positively to this pedagogical approach. According to the lecturer evaluation at the end of the semester, almost all the students indicated that this was the first time they were introduced to another pedagogical approach, other than traditional teaching, in their undergraduate studies.

Contact session attendance

The attendance of the contact sessions ($n=24$) was 86%. This percentage is perceived to be positive, since the average contact session attendance in the School of Business Management is between 55 and 60%.

According to the lecturer, some reasons for non-attendance included some students' lack of discipline, personal and family obligations, as well as extracurricular involvement such as sport and cultural activities.

The majority of the students indicated that they were motivated to attend classes because of the unique pedagogical approach. They felt that non-attendance would result in them lacking knowledge and skills they would otherwise not be able to master. Some students also indicated their motivation for attending contact sessions as a responsibility towards other group members. Although the learning experience motivated the majority of students to attend contact sessions, some students also felt that non-attendance would influence their formal formative and summative assessment results.

The students' engagement in the learning experience

Although some students communicated more in terms of questions and feedback than others, all the students engaged in the activities. From observing the students' actions, it was evident that students argued about the problems and criticised each other's view points. A division of labour within the groups was never detected, which means that all the group members worked together equally to solve problems. Some students were even seen using the internet via their cellular phones to find answers to the activities. This practice was also encouraged by the lecturer as being an additional interface where knowledge can be obtained.

During feedback, the lecturer always gave the groups opportunities to criticise or comment on each other's solutions. From these criticisms and comments, it could be observed how some students realised their faulty interpretations of the problems, limited abilities to integrate knowledge, context and cognitive skills or lack of holistic and critical thinking.

Activity-based learning therefore not only enabled the students to engage in groups and between groups during contact sessions, but also with the lecturer and information sources such as textbooks, articles and the Internet.

Student interaction

Since the lecturer enabled the students to form their own groups, interaction was quite flawless. Different emotions between students and groups were observed throughout the semester. These included negative emotions such as outbursts, frustration, anger, disappointment and disbelief. On the other hand, the interaction between students also created positive emotions, such as acceptance, laughter, encouragement and cohesion.

The dynamics within and between groups were perceived as being very positive. Some groups even encouraged positive competitiveness by designing group

t-shirts they wore to contact sessions. From the students' feedback, some indicated that at the start of the semester, they were only different students working together to solve problems and complete activities, but as the semester progressed, they became friends.

Students' attitudes towards activity based learning

During the first two weeks of the semester, the students were very sceptic and reserved towards activity-based learning. It seemed as if they did not know how to react to this pedagogical approach, since they mainly completed activities without much effort, critical thinking or argumentation. As the semester progressed, they became more involved in their own and each other's efforts. From the lecturer evaluation, it was evident that they enjoyed being challenged and were positive towards the opportunities they were given to take responsibility for their own learning. Some students also indicated that they wish for all their lecturers to use this pedagogical approach.

Self-regulated learning

The students were not passive learners during contact sessions. They were motivated and encouraged to work together, broaden their knowledge and improve their cognitive skills. This also extended to the completion of activities outside the contact session. The level of presentations during Friday contact sessions improved notably towards the end of the semester. During the first few weeks, the presentations were mainly textbook-based oral feedback on the activities. This, however, progressed to some groups engaging in role-play, using different information sources, such as the Internet, library and in some cases even information gathered from local businesses. In some cases, the students even challenged the cognitive complexity of the activities by stating that it was too easy to complete and did not expect much effort. Challenging the activities was indicative of the students' self-regulated learning and their need to enhance their knowledge and skills of business practices.

The lecturer's actions and reactions

Throughout the semester, the lecturer facilitated the students' learning. The lecturer never conformed to a situation where subject matter was explained or transferred. Since the students had many information sources to their disposal, the lecturer guided them in the direction where the information, needed to complete the activities, could be obtained. This inductive teaching approach coincided with the constructivist learning theory

where lecturers have a facilitative role and guide students to construct their own knowledge (Ertmer and Newby, 1996; Ram, 1996; Zimmerman, 1989).

Activities

Throughout the semester, the lecturer used 41 activities during contact sessions and 10 activities outside the contact session. The activities outside the contact session did not include the semester assignment the students had to complete for formative assessment purposes.

The contact session assignments were all short, challenging content-based assignments. For instance, instead of explaining the characteristics of successful entrepreneurs, the lecturer showed a video of an interview with an entrepreneur and asked the students to identify the characteristics from the interview in the video. Another example was when the lecturer focused on operational management. A video of a company's production process was shown and the students had to evaluate the operational design of the process according to criteria they developed from the textbook. This activity also expected the students to indicate and motivate any changes they would recommend. If the difficulty level of the subject matter hindered the students to successfully complete the activities, the lecturer would first attempt to get explanations from the students by using the Socratic question-and-answer method. Usually, this method helped students to understand the content, but in some instances the lecturer provided the students with additional reading assignments to enable them to gain the knowledge autonomously. These reading assignments then led to the development of homework exercises outside the classroom.

The students had more time to investigate content for the completion of activities, which promoted self-regulated learning outside the classroom. The students received an out-of-class activity every Tuesday, which had to be completed on the following Friday. During the Friday contact sessions, student groups presented their findings to the rest of the students. During these presentations, all the groups were formatively assessed on their presentation skills, participation and the level of correctness of the activity. The out-of-class activities were all practical in nature and based on the theoretical content of the theme of the week. If the theoretical content, for instance, focused on product development, the students had to develop a unique product for the out-of-class activity, or when the theme was operational processes, the students had to build a miniature scale model of a production business with all the production lines visible.

All the activities during the contact sessions as well as the out-of-class activities were challenging, and expected of students to use their critical and creative thinking abilities.

Teaching aids

The lecturer used several teaching aids to support the students' learning. During contact sessions, the lecturer used a computer, the writing board, the textbook and handouts. The computer, in conjunction with a data projector, was mainly used to show PowerPoint presentations. Occasionally, the computer was also used to do in-class Internet searches. This was mainly done with the aim of showing students how to search for content using the Internet or when the students had trouble understanding difficult subject matter the Internet was used in-class to search for possible explanations or clarification of content issues.

For the out-of-class activities, the lecturer mainly used the University's learning management system (LMS). At the North-West University, the LMS is known as eFundi. This LMS is a personalised version of SAKAI, an open source LMS used by thousands of universities, schools and private businesses worldwide. eFundi was mainly used to converse with students and to provide them with activities and assessment rubrics.

Teaching strategies

The main teaching strategy was activity-based teaching. In conjunction with this strategy, the lecturer also used cooperative learning, mediated learning and inductive teaching practices. Coinciding with cooperative learning, all students worked in groups of five to seven students. The rationale for cooperative learning was mainly to promote the students' interpersonal skills, and critical and creative thinking abilities (Zakaria and Iksan, 2007; Adriaen, 2007; Fardanesh, 2006; Arends, 1997). Mediated learning as a teaching strategy was the essence to in-class teaching. With mediated learning, the students' learning was scaffolded in each activity. Mediated learning stems from the notion that students enter a classroom with the ability to solve certain problems without the support of the lecturer. The aim is then to guide them to master more difficult problems that can, at the beginning of the lesson, only be mastered with the support of the lecturer. The lecturer then uses a principle known as scaffolding to guide the students to master more difficult problems. At the end of the lesson, the problems that were the lecturer-supported problems at the beginning of the contact session, were now the unsupported problems for the next lesson (Vygotsky, 1978; Pass, 2005; Raymond, 2007).

Conclusion

Since business management students are studying towards careers in a dynamic business environment, it is the responsibility of lecturers in higher education institutions to develop their skills and knowledge to excel

in private or public business sectors. Activity-based teaching is a pedagogical approach that creates positive attitudes as well as self-regulated and meta-cognitive skills. Towards the working environment, it enables students to develop several skills needed in business today, such as problem-solving, responsibility, communication skills, and critical and creative thinking skills. The learning gain of students who are introduced to activity-based teaching is therefore extensive and should be considered by all business management lecturers in higher education institutions. This will not only enrich their contact sessions, but also improve students' chances to excel in business.

RECOMMENDATIONS

From this research, it is evident that the lecturer was very creative in developing the activities and had an insight into advanced pedagogical approaches. Any lecturers aiming to introduce activity-based learning into their contact session should, however:

- i. Do extensive reading on the terrain of teaching and activity-based learning,
- ii. Understand the timeousness of preparing for this teaching approach,
- iii. Be motivated, energetic and knowledgeable about the subject,
- iv. Be creative and able develop challenging activities,
- v. Implement activity-based learning activities procedurally by developing only one activity for a contact session until they are used to the teaching approach.

REFERENCES

- Adriaen M (2007). Instruction design principles for integrating technology in language teaching and learning. Retrieved June 12, 2007, from http://ccfd.teluq.quebec.ca/d5_2_l.pdf.
- Alexander G, November I (2010). Objectives in South African higher education: imagine that! *J. Sci.* 24(2):101-109.
- Ameis J (2008). Routine and non-routine problem solving. Retrieved July 26, 2008, from <http://io.uwinnipeg.ca/~jameis/New%20Pages/EYR25.html>.
- Anderson LW, Krathwohl DR, Airasian PW, Cruikshank KA, Mayer RE, Pintrich PR, Raths J, Wittrock MC (2001). A taxonomy for learning, teaching and assessing. Boston, Mass.: Addison Wesley Longman.
- Arends RT (1997). Classroom instruction and management. New York: McGraw-Hill.
- Bloom BS, Englehart MB, Furst EJ, Hill WH, Krathwohl DR (1956). Taxonomy of educational objectives: the classification of educational goals. Handbook 1. London: Longmans.
- Drangajov S, Vassilev V, Dimitrov N, Djelatova M (2005). Graph and network optimization software package. Retrieved August 10, 2006, from <http://www.iit.bas.bg/PECR/55/20-29.pdf>
- Ertmer PA, Newby TJ (1996). The expert learner: strategic, self-regulated, and reflective. *Instruc. Sci.* 24(1):1-14.
- Fardanesh H (2006). A classification of constructivist instructional design models based on learning and teaching approaches. Retrieved September 2, 2007, from <http://eric.ed.gov/>
- Gijbels D, Van De Watering G, Dochy F, Van Den Bossche P (2006). New learning environments and constructivism: the students'

- perspective. *Instruc. Sci.* 34(3):213-226.
- Government Gazette (2004). The higher education qualifications framework. (General notice 1322 of 2004.) Government Gazette, no. 26559, 7 July 2004.
- Hall AR (2006). Families, Children and Communities in a Multicultural and Diverse Society. Retrieved February 22, 2008, from <http://eric.ed.gov/>
- Hicks CD, Glasgow NA, Mcnary SJ (2005). What successful mentors do: 81 research-based strategies for new teacher induction, training, and support. Thousand Oaks, Calif.: Corwin Press.
- Killen R (2007). Effective teaching strategies. 4th ed. Scarborough, Canada: Thomson Learning Nelson.
- Knowles M (2004). Illegal moves as a source of problem difficulty. Tallahassee: University of Florida. (Thesis – MSc).
- Levine MF, Guy PW (2007). Activity based learning in a freshman global business course: analyses of preferences and demographic differences. *J. Col. Teach. Learn.* 4(8):27-38.
- Lynch CL, Wolcott SK (2001). Helping your students develop critical thinking skills. Retrieved November 18, 2007, from http://www.idea.ksu.edu/papers/idea_Paper_37.pdf
- Mafa O (2003). Optimising mixed-ability grouping for effective instruction at the junior secondary school level in Botswana. Pretoria: UNISA. (Thesis – DEd).
- Mcmahon GP (2007). Getting the HOTS with what's in the box: developing higher order thinking skills within a technology-rich learning environment. Perth: Curtin University of technology. (Thesis – PhD).
- Mokhaba MB (2005). Outcomes-based education in South Africa since 1994: policy objectives and implementation complexities. Pretoria: UP. (Thesis – PhD).
- Moon J (2005). Linking levels, learning outcome and assessment criteria. Retrieved November 19, 2007, from http://www.bologna-bergen2005.no/EN/Bol_sem/Seminars/040701-02Edinburgh/040701-02Linking_Levels_plus_ass_crit-Moon.pdf
- Murphy E (1997). Characteristics of constructivist teaching and learning. Retrieved June 4, 2007, from <http://www.cdl.ca/elmurphy/emurphy/cle.html>
- O'connor J (2001). Literacy in context: language to analyse, review and comment. Cambridge: Cambridge University Press.
- Pass S (2005). Parallel paths to constructivism: Jean Piaget and Lev Vygotsky. Charlotte, N.C.: Information Age Publishing.
- Ram V (1996). Intelligent information retrieval support in constructivist learning environments. *South Afr. J. High. Educ.* 10(1):89-95.
- Raymond EB (2007). Learners with mild disabilities: a characteristics approach. Needham Heights, Mass.: Pearson/Allyn & Bacon.
- Schloeglmann W (2004). Routines in non-routine problem solving processes. Retrieved July 2, 2008, from http://www.emis.de/proceedings/PME28/RR/RR126_Schloeglmann.pdf
- Schunk, D.H. (2000). Learning theories: an educational perspective. 3rd ed. Upper Saddle River, N.J.: Merrill.
- Slavin RE (2000). Educational psychology: theory and practice. 6th ed.
- Smith PK, Wigboldus DHJ, Dijksterhuis AP (2008). Abstract thinking increases one's sense of power. *J. Exp. Soc. Psychol.* 44(2):378-385.
- Snyman ME (2000). Probleemgebaseerde leer as 'n alternatiewe metode in die onderrig van toegepaste taalkursusse op gevorderdevlak: 'n gevalliestudie. *Tydskrif vir taalonderrig*, 34(1):78-92.
- Soy SK (2006). The case study as a research method. Retrieved August 2, 2011, from <http://www.ischool.utexas.edu/~ssoy/usesusers/l391b.htm>
- Spivey NN (1997). The constructivist Metaphor. Washington DC: National Academic Press.
- Trabandt J (2002). Critical thinking definitions. Retrieved April 10, 2006, from <http://www.nvcc.edu/home/jtrabandt/discussion/>
- Van den Berg G (2004). Die geleenthede wat uitkomsgebaseerde taalhandboeke bied vir die ontwikkeling van leerders se meervoudige intelligensies. Pretoria: UNISA. (Thesis – DEd).
- Von Glaserfeld E (1995). Radical constructivism: a way of knowing and learning. London: Falmer Press.
- Vygotsky LS (1978). Mind in society: The development of higher psychological processes. Cambridge, Mass.: Harvard University Press.
- Ward JD, LEE CL (2002). A review of problem-based learning. *J. Family Consum. Sci. Educ.* 20(1):16-25.
- Yin RK (1984). Case study research: Design and methods. Newbury Park, CA: Sage.
- Zakaria E, Iksan Z (2007). Promoting cooperative learning in science and mathematics education: a Malaysian perspective. *Eurasia J. Math. Sci. Technol. Educ.* 3(1):35-39.
- Zimmerman BJ (1989). A social cognitive view of self regulated academic learning. *Educ. Psychol.* 81(3):329-339.