An Appraisal of Students' Metacognitive Strategies and Learning: The Case of Undergraduate Educational Psychology Students of the University of Bamenda

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Abstract

Purpose: This study aimed at investigating the role metacognitive strategies on students' learning. In this regard the researcher sought to provide answers to two important research questions namely: 1) How does planning influence students' learning? 2) How does self-monitoring influence students' learning? The theoretical underpinnings of the study were provided by Tchombe's Mediated Mutual Reciprocity Theory, Vygotsky's Theory of Sociocultural Development, Piaget's Cognitive Theory of Development Bruner's Spiral Curriculum.

Methodology: A descriptive survey design was considered necessary whereby self-constructed close ended questionnaires in a four-point Likert scale format were given to 60 students randomly selected from the Department of Educational Psychology of The University of Bamenda. Data were analyzed by using simple frequencies and percentages.

Findings: Findings of the study revealed that when students engage in planning and self-monitoring, they are better equipped to solve problems and to be better learners who learn in meaningful ways and are able to construct knowledge.

Recommendations: Recommendations were made to educational authorities, teachers and students. For educational authorities, it was recommended that they should closely monitor the teaching and learning process to ensure that learners are not passive observers in the classrooms but are actively engaged in the teaching and learning process. As for teachers, they should help learners to become lifelong learners by teaching the learners metacognitive strategies. Learners should also understand that learning should be about setting goals, planning and self-monitoring and learning must be meaningful.

Keywords: *Metacognitive Strategies, Planning, Self-Monitoring, Learning.*

1.0 INTRODUCTION

The essence of education in the twenty first century should be to ensure that classroom events as well as the overall teaching and learning process take a leap from teachability to learnability (Tchombe, 2006). Such arrangements imply that pedagogical practices of teachers are geared towards incorporating teaching methods and strategies that engage students/pupils to be more active in the teaching and learning process in a transformative setting. In essence, teaching strategies should permit learners to develop their learning capacities as they are increasingly being empowered to remember, reason, think deeply, reflect on their own learning, plan, and monitor, evaluate and solve problems (Tchombe, 2019). In the light of this it is important for teachers to reflect on their own beliefs, practices and personal characteristics as they engage in the teaching and learning process so that they do not become the focal point but ensure that the learners themselves are well equipped to take ownership of their own learning. By doing this, focus shifts dramatically from teachability to learnability as the teacher imparts the learners with knowledge and skills that ensure lifelong learning. This now brings to the fore the importance of focusing on teaching/learning as a process rather than as a product because as a process, the teacher empowers the learners to understand better their own learning, to employ metacognitive skills and strategies in learning and to take control of the learning process. Such metacognitive strategies will ensure that learners constantly plan, monitor evaluate their learning, as well as promote higher cognitive operations.

2.0 LITERATURE REVIEW

Tchombe (2019) posits that for teaching to address cognitive processes, it is vital for teachers to start at the child's level of understanding, to actively engage pupils and give them the latitude to take personal initiative, to make use of participatory strategies, as well as move classroom events from the frame of teaching to that of learning. This view is in synergy with Cain and Oakhill (2007) who maintain that for teachers to help learners attain problem solving skills it is vital to create an enabling environment that will ensure effective transition, as well as help pupils through the use of meaningful strategies to learn. In this regard, it is thus imperative to incorporate transformational and restructuring activities so that learner's cognitive ability develops and matures further.

For transformational learning to take place, teachers must engage students in the teaching and learning process whereby there is mutuality by both teachers and pupils in all classroom events. By implication, it is necessary that teachers as facilitators give complete, intelligent and elaborate answers to students' worries and make demands of students in same way that students can make similar demands on teachers (Tchombe, 2019). Teachers must therefore think about thinking, reflect on how their role as a craftsman can enrich what they do in the classroom as they constantly seek to realize the degree of learners' involvement in the learning process.

Flavell (1976) defines metacognition as a person's knowledge about his/her cognitive processes that enables him/her to learn and understand. In this regard, metacognition should not only focus on the strategies that students use but students' knowledge of when and how to use them. Griffith & Ruan (2005) posit that metacognition gives the individual the latitude to show an awareness and regulation of his/her mental processes. It is thus necessary that teachers incorporate metacognition in their belief system about teaching and ensure that at every given opportunity they teach students the necessary skills and strategies to empower them to employ higher mental

processes in learning. In essence, teachers' pedagogical practices must employ creativity as they seek to make use of strategies and skills that will engage students in a context driven by what Tchombe (2019) calls mutual reciprocity. Such a context will enable students to go beyond the given as they actively engage in the process through questioning and answering, discovery learning, collaborative and cooperative learning. Bruner (1989) draws attention on the need for learners to go beyond the information given. This implies teachers have the responsibility to push learners to search for information on their own, perhaps using inquiry techniques.

The theoretical underpinnings of this study hinges on the views of Vygotsky, Bruner and Piaget who all recognize and emphasize the need for the learner to be actively engaged in the teaching and learning process. Vygotsky (1978) makes the case for collaborative learning whereby a more skilled tutor or peer facilitates the transition from the individual's zone of proximal development (ZPD) to new levels of skills and competencies. In this light, new categories are developed and transformation is enhanced through communal action with teachers assisting as partners as they seek to mediate learning through scaffolding. It is thus evident that this theory enhances the participatory approach as teachers' awareness of this view of ZPD can enhance their teaching strategies.

Bruner (1985), on his part sees the interaction that learners have with others as very necessary. According to Bruner, it is vital to provide the necessary support to learners' self-conscious participation and intelligent self-regulation. Bruner's spiral curriculum gives the learners the freedom to move from one level of understanding to the next, making sure that simple concepts are taught before moving to more complex concepts. Adding his voice to the views of Bruner and Vygotsky, Durkin (1996, p.370) states that "The whole process of fostering development relates to the zone of proximal development as it reflects both the individual's own capacities and the structures made available through participation with others in a particular social environment". In this light, it is glaring that the participatory approach to teaching as championed by Vygotsky focuses on learnability as it engages students in cognitive processes and action. Thus, it is a sine qua none for teachers to understand the cognitive processes in teaching which enables learners acquire knowledge. When learners engage in debates, classroom discussion, organization, construction of images, group work with others, the more knowledgeable learners help in scaffolding learning for those with lower ability levels and in this process of give and take, those learners who are below par are given assistance to perform task that they cannot individually perform. In other words, such learners are aided to go beyond their zone of proximal development. In the views of Vygotsky, Bruner and Tchombe, therefore, it is inevitable to see that knowledge is coconstructed by the learners and the surrounding culture. The learner actively engages in constructing meaning as he interacts with others in the environment.

Looking at the views of Piaget (1971) which espouses assimilation, accommodation and adaptation in the process of creating knowledge, it is important for teachers to employ questioning techniques, previous knowledge, requesting information, demanding elaboration and clarification for the development of students' conceptual knowledge and metacognitive skills. Piaget posits that learning through interaction with others is an important means of raising intrapersonal disequilibrium. In Piaget's own words, the learner is considered a little scientist who in the process of assimilation is struggling to create meaning on his own as he relates new information with previous information in the schema. At the same time the learner is sometimes forced to accommodate information by changing or altering the schema to make meaning of certain

challenging learning situations. By so doing the learner draws on his/her metacognitive abilities, especially with regard to learning strategies whereby he/she must consistently organize the information at hand, elaborate on it, construct visual images, engage in elaborate rehearsals and chunking, if effective learning must take place.

Research studies on metacognition carried by researchers like Durkin (1993), Pressley (2002) and Pressley, Pressley, Allington, Wharton-McDonald, Block, Morrow (2001) were all able to establish in their studies that teachers are more likely to test comprehension than teach comprehension. More precisely, Pressley (2002) found out that teachers are overwhelmed with the assumption that if students simply spent a bulk of their time reading and eventually got tested, they will end up comprehending concepts better. In other words, they will have the latitude to become self-regulated learners because they can aptly make use of comprehension strategies.

Research Gaps

From the literature review on metacognitive strategies and learning, a number of research gaps were identified which this study has attempted to fill the void. From a theoretical perspectives, most of the studies on metacognion focus on Flavell's theory of Metacognition, others make us of constructivist perspectives like Vygotsky, Piaget and Bruner. This study, however, thought it wise to incorporate a contextually relevant theory that situates the role of learners' cultural context in learning. By making use of Tchombe's Mediated Mutual Reciprocity Theory, this study has been able to articulate the role of cultural amplifiers as well as the learner's personal input in the teaching and learning process. From a contextual perspective, most of the empirical studies reviewed here were conducted in the west. This study, however, was conducted in a non-western context, precisely in the North West Region of Cameroon with its cultural realities different from those of the West to see if similar findings will apply

Statement of the Problem

Learning how to learn or thinking bout thinking has been one valuable skill that our learners of the twenty first century have found difficult to learn and incorporate in their daily experiences as students who are want to know. Learners in most of our classrooms, engage in learning in a passive rather than active way. They believe so much in rote memorization whereby they do surface rehearsals of the learning materials and such learning never gets processed properly in the memory. Miller (1956) draws our attention to the fact that our short-term memory is limited in capacity and duration, reason why we must properly process information before storing. Unfortunately, our learners of today do not do that as they do not know how to learn. It is very possible that such passivity in learning where rote memorization is embraced by most learners is as a result of the fact that they are unaware, have not been exposed to or taught metacognitive strategies which have the potential to imbibe them with skills to become active learners and coconstructors of knowledge. Most of these learners lack the skills of planning whereby they can decide on where, when, what and how they want to study. Talking of the how to study, learners can make use of study strategies like elaborate processing, deep level rehearsals, construction of images, organization, chunking and the use of rehearsals so that the material they are studying becomes meaningful to them. They can also monitor their learning by frequently asking themselves questions whether they are doing what they should be doing and the way they should be doing it. Unfortunately, our learners are not conversant with these strategies and most of our teachers do not take upon themselves to teach such strategies to the learners. Tchombe (2019) draws our attention to the fact that teaching must

shift from teachability to learnability, meaning that teachers must imbibe our learners with the necessary skills and knowledge to be independent, active learners who are able to take ownership and control of their learning. It was against this backdrop that this research was proposed and carried out with the purpose of answering the following research questions: 1) How does planning influence students' learning? ; 2) How does self-monitoring influence students' learning?

3.0 METHODOLOGY

A descriptive survey design was considered appropriate for this research. This design enabled the researcher to administer questionnaire to a cross section of the students to get their views and opinions on how they employ metacognitive strategies like planning and self-monitoring in their learning. The questionnaire, had a section on students' demographic information, like class, ages, sex. The other part of the questionnaire focused on items intended to measure the indicators of metacognitive strategies like planning and self-monitoring. The questionnaire was developed by the researcher and was based on a four point Likert scale format with respondents expected to choose from either Strongly Agreed (SA), Agreed (A), Disagree (D) or Strongly Disagree (SD). The sample was made up of 60 undergraduate students randomly selected from the Faculty of Education of The University of Bamenda.

4.0 FINDINGS

The data obtained were analyzed using tables, simple frequencies and percentages. Let us recall that this study sought to answer two research questions which are: 1) How does planning influence students' learning?; 2) How does self-monitoring influence students' learning? Each of these research questions is presented on a separate table and analyzed using frequencies and percentages. There is a brief descriptive analysis below each table. On the table Strongly Agree is presented as (SA), Agree = A, Disagree = D and Strongly Disagree = SD.

Table 1: Planning and Students' Learning

S\N	Items	SA & A		D & SD	
		Freq	%	Freq	%
1	I am aware that when studying I should organize, elaborate on the material as well as use imagery	56	93.3	4	6.7
2	Drawing a good study time table always help me perform better.	52	86.7	8	13.3
3	I usually don't like to be distracted when it is study time	56	93.3	4	6.7
4	Deciding on what to study is important to me	50	83.3	10	16.7
5	Deciding on where to study is important to me.	40	66.7	20	33.3
6	I decide on the Strategies (e.g. summarization) I will use to study ahead of time.	55	91.7	5	8.3
	Average Total		**85.3**		**14.7**

According to Table 1 above, it shows that for items 1, an overwhelming majority (93.3%) of the respondents agreed and strongly agreed while 6.7% disagreed and strongly disagreed that they are aware that when studying they should organize, elaborate on the material as well as use imagery. The trend was not too dissimilar for item two which saw 86.7% of the respondents strongly agreeing and agreeing with the statement that drawing a good study time table always helps them perform better. In like manner, 93.3% of the respondents strongly agreed and agreed while only

6.7% disagreed with the statement that they usually don't like to be distracted when it is study time. Looking at the fourth item, a similar trend was noticed with 66.7% of the respondents agreeing and strongly agreeing with the statement that deciding on what to study is important to them. As far as deciding on where to study is important to me, 66.7% of the respondents agreed and strongly agreed while only 33.3% disagreed and strongly disagreed with this view. Finally, looking at the last item on deciding on the strategies (e.g. summarization) they will use to study ahead of time, 91.7% agreed and strongly agreed while just 8.3% of the respondents disagreed and strongly disagreed with this view. In summary an overwhelming 85.3% strongly agreed and agreed with the view that planning has a tremendous positive effect on their learning.

Table 2: Self-Monitoring and Students' Learning

S/N	Items	Freq	%	Freq	%
1	I always make sure that I am doing the learning task I am supposed to be doing at the right time	51	85	9	15
2	I make sure I respect my study time table.	46	76.7	14	23.3
3	I make sure that I study in a conducive and quiet environment.	47	78.3	13	21.7
4	I make sure that the strategies I adopt to study are applied.	45	75	15	25
5	Whenever I realize I am not following my time table I adjust.	52	86.7	8	13.3
	Average Total		**80.3**		**19.7**

A closer look at Table 2 shows that an overwhelming majority (85%) of the respondents agreed and strongly agreed with the view that they always make sure that they are doing the learning task they are supposed to be doing at the right time. As far as item 2 is concerned, 76.7% of the respondents strongly agreed and agreed that they make sure they respect their study time tables. A similar trend was noticed with item 3 where 78.3% strongly agreed and agreed that they make sure that they study in a conducive and quiet environment. Looking at the item on whether they make sure that the strategies they adopt to study are applied, majority (75%) of the respondents strongly agreed and agreed while only 25% disagreed with the view. Finally, an overwhelming 86.7% of the respondents agreed and strongly agreed that whenever they realize they are not following their time tables they adjust while only 13.3% disagreed with this view. In summary an overwhelming 80.3% strongly agreed and agreed with the view that planning has a tremendous positive effect on their learning.

5.0 DISCUSSION, CONCLUSION AND RECOMMMENDATIONS

Discussion

The results arrived at above are in tandem with Tchombe (2019) who found out that learners should be able to develop their learning capacities as they are increasingly being empowered to remember, reason, think deeply, reflect on their own learning, plan, monitor, evaluate and solve problems. Such learning capacities can be facilitated by teachers who are called upon to play the role of facilitators by giving complete, intelligent and elaborate answers to students' worries and make demands of students in same way that students can make similar demands on teachers. This, in essence, will require a big paradigm shift from teachability to learnability whereby learners are called upon to stand side by side with the teachers to be coconstructors of knowledge rather than

consumers of knowledge. By employing metacognitive strategies like planning and self-monitoring in their learning, learners are empowered to take ownership and control of their learning as they are more and more engaged in meaningful learning. Also, in synergy with the above results is Griffith & Ruan (2005) who posit that metacognition gives the individual the latitude to show an awareness and regulation of his/her mental processes. Learners must constantly make use of metacognitive strategies if they are to process information in a meaningful way. This enables them to dump to the side the notion of rote memorization which has proved counter productive over the years as far as meaningful learning is concerned. These results further agree with Bruner (1985), who sees the necessity of providing the necessary support to learners' self-conscious participation and intelligent self-regulation. Bruner's spiral curriculum gives the learners the latitude to move from one level of understanding to the next, making sure that simple concepts are taught before moving to more complex concepts. As far as Bruner is concerned meaningful learning can occur when learners are given the opportunity to go beyond the information given.

Conclusion

This study has been able to establish that there exists a relationship between metacognitive strategies and student learning. More specifically, this study has been able to establish that when students engage in planning and self-monitoring, they are better equipped to solve problems and to be better learners who learn in meaningful ways and are able to construct knowledge. Students should not just be passive in the teaching and learning process. Rather, they should be actively engaged, as they ask questions for clarifications, engage in discussions with their friends, make use of elaborate rehearsals, organizations, mnemonics and chunking in the learning process. By doing this, they are preparing themselves for lifelong learning as the paradigm shift moves from learnability to teachability.

Recommendations

Based on the results above, a number of recommendations were made to educational authorities, teachers, students and parents. To begin, educational authorities should closely monitor the teaching and learning process to ensure that learners are not passive observers in the classrooms but are actively engaged in the teaching and learning process. As for teachers, they should help learners to become lifelong learners and be actively involved in coconstructing knowledge alongside the teachers by making use of questioning techniques, making them to go beyond the given by giving them assignments to do at home. Teachers should also teach learners metacognitive strategies. Learners should understand that learning should be about setting goals, planning and self-monitoring and learning must be meaningful whereby they constantly employ learning strategies in their own learning.

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